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EDITORIAL.

In the first article of the present number, Professor Dawson presents the results of a long study of the natural interests of children in the Bible. While the author feels profoundly the desirability of larger numbers, he sees the suggestiveness and great significance of his results. He has made it at least probable that the typical boy or girl from 9 to 14 on the whole prefers the Old Testament to the New; that interest in the Gospels becomes dominant only after adolescence; and that at 12 and 13 boys' preference for the Old over the New Testament is greater than that of girls. Interest in the prophetic books is very slight before the teens, and Paul and the doctrinal parts have very slight interest before 20. For both boys and girls interest in Jesus is less than in at least two other characters of the New Testament and nearly equalled by several in the Old, due perhaps to the bad pedagogy that makes his deity and humanity interfere with and confound each the other. The personal element is most attractive to children. Boys' interest in John the Disciple culminates at 16, three years later than that of girls; their interest in David at 14.

Mrs. Burk presents the fullest study ever made on children's collecting instincts, which seem to culminate at 8 or 10. The order among the California children studied is cigar tags, stamps, birds' eggs, marbles, shells, buttons, pictures, etc.

Printed in Germany.

Natural objects lead all others, most objects being found, not given or bought, and imitation being the chief motive.

Professor Hodge brings out the practical conclusions of his two preceding articles on nature study, criticising in a very effective way some of the methods most widely approved and used.

Mr. Eby prints the condensed results of a more comprehensive study on the reconstruction of the kindergarten and it is hoped he will publish his results in fuller form in a volume later. Mr. Eby is familiar with German and has read all of Froebel with great care and attempted to sift all the more important authors in different languages upon the subject, has corresponded widely with kindergartners and visited the gardens of many States. While Mr. Eby does not take the somewhat radical view of the Editor of this journal, he sees very clearly the calamitous effects of the ultra conservative and metaphysical party among the kindergartners, and his conclusions cannot fail to commend themselves in general to every unbiased mind. The Editor regards this article on the whole as the most sane and competent presentation of the subject that has been made in recent years in any language and has accordingly given it unwonted space.

In the Literature and Book Notes, brief digests of the ten most important articles published in the Japanese journal for child study are given, and about forty recent publications are described.

CHILDREN'S INTEREST IN THE BIBLE.

By GEORGE E. DAWSON,
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CHAPTER I.

INTRODUCTION.

The following study is an attempt to apply to religious education a principle and a method generally accepted in secular education. The *principle* may be thus stated: The spontaneous interests of a child are expressions of a stage of life. They indicate, therefore, fundamental needs and aptitudes. They afford a starting point for all education, formative and reformative. If they are healthy interests, they suggest the material and method to be employed in developing character through the use of good tendencies. If they are unhealthy interests, they suggest the material and method to be employed in developing character through the disuse or transformation of bad tendencies.

The scientific study of man is opening up to us many avenues of approach to this problem of interest. First of all, we may approach it through the child's relations to the race it springs from. Embryology, comparative anatomy, and comparative psychology supply evidence that the child, in the main lines of its development, repeats racial history. Its physical and psychical life begins with a summary of what humanity before it has lived through. In bone, muscle, nerve-cell, instinct and intelligence, we find traces of ancestral struggle, and progress or retrogression. Baldwin[1] says: "What is present in the mind now, in the way of function, is due somehow to the past. Nervous inheritance provides for the apparatus, and mental inheritance sums up the experience." The implication of this view is, that a child's spontaneous interests at different stages of its development reflect more or less clearly the tendencies built up in the experience of the race. Says Dewey:[2] "There is a sort of natural recurrence of the child mind to the typical activities of primitive peoples; witness the hut which the boy likes to build in the yard, playing hunt, with bows, arrows, spears, and

[1] *Mental Development in the Child and the Race*, p. 27.
[2] *School and Society*, p. 62.

so on." These interests are transitional, as are the stages of development of which they are an expression, but they have an important relation to the child's life. They indicate, in a broad way, what the child needs, or does not need, at that particular period.

Again, we may consider a child's interests from the view-point of its individual development. Neurology is showing us that there is a definite order of growth in the brain and nervous system. First to mature is the reflex mechanism; then, the mechanism of special sensation and movement; and finally, the mechanism underlying association of ideas and other more complex psychic processes. This suggests that the child's life is first reflex and instinctive; next, sensori-motor; and, last of all, associative and rational. Here genetic psychology makes its contribution to the problem, and tells us that the suggestions of neurology are true. The child is found to be first a creature of psychic reflexes or instincts, such as hunger, fear, anger, and sympathy; then, of sensations, such as tactile, gustatory, auditory and visual; then, of the more complex psychic processes, such as memory, imagination, will and conscience. The study of children's interests discloses to us the fact that these stages of neuro-psychical development are closely paralleled by just the spontaneous interests that we should expect to crop out. In general, the first interests of the child are those centering in its instinctive life. The next are those centering in its sensations and activities. The next are those centering in its intellectual life and its more complex feelings. According as the various stages of development throw into prominence one or the other group of neuro-psychical tendencies, we may expect to find certain interests distinctive of that group and pointing the direction and progress of the child's growth.

As a result of such conclusions regarding the fundamental character of children's spontaneous interests, most of the branches ordinarily taught in the public schools are being scrutinized in a new light, and the entire question as to choice and gradation of lesson material is being reopened. Both educational experts and teachers practically engaged in school-room work are testing in various ways the educational values of the subjects taught and their adaptation to the different levels of feeling and intelligence. The elementary interests of children in the qualities of objects, such as *use*, *action*, *color*, *form*, and the like, have been studied by Binet,[1] Barnes,[2] and Shaw.[3] The distribution of interests among the subjects of the public school

[1] *Revue Philosophique*, December, 1890.
[2] *The Pacific Educational Journal*, February, 1896.
[3] *Child Study Monthly*, Vol. II, pp. 152-167.

curriculum has been studied by Taylor.[1] Children's interests in the reading matter of the school curriculum, as well as their general literary interests, have been studied by Wissler,[2] Miss Chase,[3] and Kirkpatrick.[4] Miss Ward[5] has studied the geographical interests of children; Mrs. Barnes,[6] the historical interests; and Miss Gates,[7] the musical interests. Play-interests have been studied by President Hall,[8] Ellis and Hall,[9] Gulick,[10] and Mrs. Burk.[11] The puzzle interests, as showing the more complex intellectual aptitudes of children, have been studied by Lindley.[12] O'Shea,[13] has studied children's interests in pictures, myth and nature literature, etc. While their interests as revealed in ideals, ambitions, and choice of occupations, have been studied by Barnes,[14] Miss Darrah,[15] Monroe,[16] and Jegi.[17]

It is evident, therefore, that the principle of interest has the sanction of scientific research, and that it is rapidly becoming a standard for estimating the material of instruction. I see no reason why the same principle should not be recognized in shaping the curriculum of religious education. And I see no reason why those who are concerned with the education of children in the Sunday School, or in the church at large, should not abandon the standards of adult *opinion* and adopt a standard of *facts*, derived experimentally from the consciousness of the child. As it seems to me, the evidence is conclusive that until this is done, the programme of religious instruction will lack a secure basis. We live in an age when the principles of inductive science are being applied to every form of human culture. In secular education at least, Bacon's prophetic dictum is at last coming to be recognized. "Man, as the minister and interpreter of nature, does and understands as much as his observations on the order of nature, either with regard to things

[1] *Pedagogical Seminary*, Vol. V, pp. 497-511.
[2] *Pedagogical Seminary*, Vol. V, pp. 523-540.
[3] *Proceedings N. E. A.*, 1898, pp. 1011-1015.
[4] *North Western Monthly*, Vol. VIII, pp. 651-654; Vol. IX, pp. 188-191, and pp. 338-342.
[5] *Education*, Vol. XVIII, pp. 235-240.
[6] Barnes's *Studies in Education*, pp. 83-93.
[7] *Journal of Pedagogy*, Vol. II, pp. 265-284.
[8] *Scribner's Magazine*, Vol. III, pp. 690-696.
[9] *Pedagogical Seminary*, Vol. IV, pp. 129-175.
[10] *Pedagogical Seminary*, Vol. VI, pp. 135-151.
[11] *North Western Monthly*, Vol. IX, pp. 349-355.
[12] *American Journal of Psychology*, Vol. VIII, pp. 431-493.
[13] *Child Study Monthly*, Vol. II, pp. 266-278.
[14] *North Western Monthly*, Vol. IX, pp. 91-93.
[15] *Popular Science Monthly*, Vol. LIII, pp. 88-98.
[16] *Education*, Vol. XVIII, pp. 259-264.
[17] *Transaction of the Illinois Soc. of Child Study*, Vol. III, pp. 131-144.

or the mind, permit him, and neither knows nor is capable of more" (*Novum Organum*). In such an age, the *a priori* conclusions of adults, or guesses, more or less accurate, as to what a child needs, cannot much longer meet the requirements.

Such considerations as the foregoing have suggested the *method* employed in this study. Starting from the conclusions of current scientific inquiry as to the meaning of children's spontaneous interests, and following the same general lines that have been followed in the studies of children's interests referred to above, I have attempted to investigate the interest of children in the Bible. The questions I have kept before me are the following:

1. How do children feel towards the Old and the New Testament, respectively, at different ages?
2. How do they feel towards the various books of the Bible at different ages?
3. How do they feel towards the different scenes, stories, and characters of the Bible at different ages?
4. What is the development of interest in the scenic, narrative, and personal elements of the Bible as age advances?
5. What is the development of interest in the person and works of Jesus as age advances?

A syllabus of questions was prepared in such a way as to bring out directly and indirectly the information sought under each of these heads. Over 12,000 copies of this syllabus were given out to parents, Bible-school teachers, and public school teachers. Instructions were usually given to extend the observations over as long a period as possible, and to use such exact tests as they could in getting at the preferences of children. From the children thus studied by others, and those studied by myself, 1,000 have been selected as the basis of this paper. Most of these children live in the larger cities and towns of New England. They are mainly of American parentage, though there are included a few Italians and French Canadians. They are distributed among all the evangelical denominations, the Congregationlists predominating. There are, besides, a few Catholics. The children range in age from 8 to 20, and are about equally distributed as to age and sex. Returns were received from some adults above 20, but these are not included in the results as summarized. In general, it is believed that the children studied are typical, and that the returns afford a reasonably accurate illustration of children's Bible-interests within the ages and classes represented.

CHAPTER II.

Analysis of Data.

§ I.

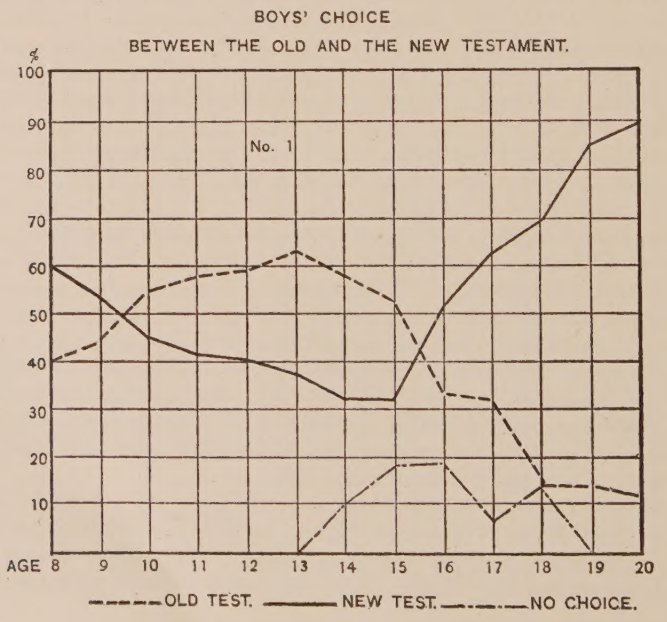
Choice between the Old and the New Testament.

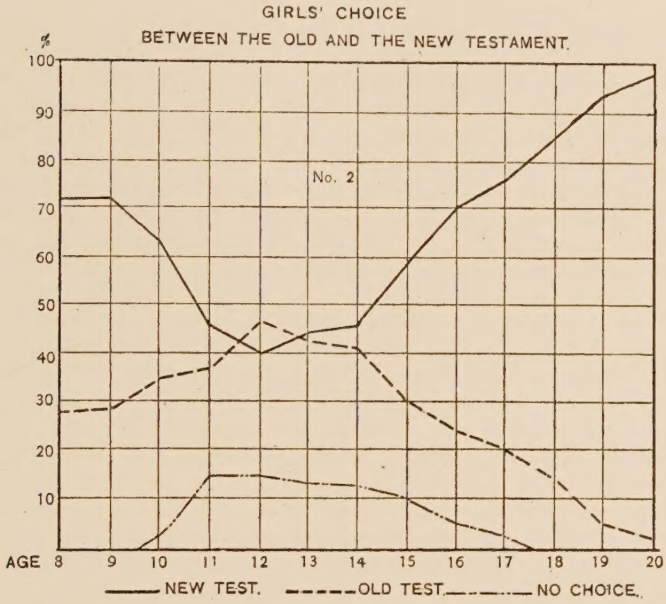
I have based my estimate of children's choice between the main divisions of the Bible upon three classes of facts: (1) Their own direct statements as to their preference; (2) indirect evidence secured through their choice of Bible scenes, stories and characters; and (3) the judgment of teachers. At first thought, a child's statement that he likes one part of the Bible better than another might seem to have little value. And yet, when we look at the matter from the standpoint of every-day experience, is there not every reason for thinking that the average child, in the Christian home or Sunday School, knows what he likes, or does not like, in the Bible as in other things? When the schoolboy says he likes United States history better than arithmetic, or *vice versa*, there is no reason for doubting the genuineness of his preference. When the boy says he likes to read the life of Daniel Boone, or the story of Robinson Crusoe, better than a treatise on physics, we do not hesitate to accept his statement as significant. We adults often forget that children's likes and dislikes are more spontaneous than our own, and that they are apt to be much less disguised. There has nothing impressed me more in looking over the returns received from children than the perfect candor of their answers. This was not always the case in the returns received from adults. The latter often hesitated to express a preference, giving reasons that indicated clearly a feeling that it was not just the proper thing to like one part of the Bible better than another. Every part of the Bible is holy; therefore, the properly constituted man or woman should like one as well as another. The typical child is not troubled with any such feeling towards the Bible. If he doesn't like some portion of it, he says so; or if he doesn't like any of it, he says so. This may be additional evidence of his innate depravity. I merely state the fact. A child's statement that he likes the Old Testament better than the New, or *vice versa*, seems to me therefore to be worthy of acceptance as an index of his interest. When such a statement is, in general, confirmed by the indirect evidence of other preferences and by the testimony of teachers, one's conclusions ought to rest upon a fairly substantial basis.

At eight years old, the majority of children of both sexes prefer the New Testament; that is to say, 60% of the boys and 72% of the girls. The interest in the New Testament declines, however, during the next few years, reaching its

minimum at 14, in the case of boys, and at 12, in the case of the girls. At this point, 32% of the boys and 40% of the girls prefer the New Testament. At 15, the interest of the boys remains about the same as at 14, but thereafter it rises rapidly and steadily until at 20 years 88% prefer the New Testament. The girls' interest rises slowly from 12 to 14, and thereafter rises even more rapidly than the boys', until at 20 years 97% prefer the New Testament. At eight years, 40% of the boys and 28% of the girls prefer the Old Testament. From eight years on, the interest in the Old Testament steadily rises, reaching its maximum at 13, in the case of the boys, and at 12 in the case of the girls. At this point, 63% of the boys and 46% of the girls prefer the Old Testament. Thereafter, in the case of both sexes, the interest steadily declines, until at the age of 20, 12% of the boys and 3% of the girls express a preference for the Old Testament. From 13 to 19 years, some of the boys say they have no choice, the maximum of such being reached at 15 and 16. In the case of the girls, this period of uncertainty reaches from 10 to 17, the maximum being reached at 11 and 12. A graphic presentation of these results is given in diagrams 1 and 2.

What interpretation may we place upon these results? To begin with, the interest of the youngest children in the New Testament is probably not a general interest in that division





of the Bible. It centers rather in the Infant Jesus. A child is always of interest to other children, whether in life or story. The scenes and incidents of the Bible relating to childhood are prime favorites with most of the younger children that have been studied. Thus, the birth of Jesus, the finding of Moses by Pharoah's daughter, Jesus blessing little children, and the flight into Egypt are among the most commonly mentioned. To this natural interest in the childhood of the Bible must be added the special interest derived through Christian art and literature, dealing with such events as the Annunciation, the Nativity, and the Flight into Egypt, much of which the average child has some acquaintance with. Besides these aids to interest, we must also take into account the associations of Christmas time, which give the birth and childhood of Jesus a unique place in children's affections. It is not surprising, therefore, that the New Testament, which contains the stories and scenes relating to a child naturally interesting, and rendered more so by the art, literature, and customs of Christian civilization, should be preferred by so many of the younger children.

This element of attractiveness aside, however, it is probable that the New Testament does not naturally appeal so strongly to children as does the Old. So early as eight years, 40% of the boys and 28% of the girls prefer the Old Testament,

and these percentages steadily rise for some years. This indicates that even in the youngest children, to whom the Infant Jesus is especially attractive, there are other forces at work in determining their interest. These forces assert themselves more and more, and during the years from nine or ten, on to thirteen or fourteen, they shift the center of interest to the Old Testament. How strong these forces must be, is suggested by another important fact, that should be taken into account in this connection. In general, religious teachers lay much more stress upon the facts and teachings of the New Testament than upon those of the Old. As shown by this study, the interest of adults is overwhelmingly in favor of the New Testament. Estimating the child from the adult standpoint, these adults impose their interests upon the children they instruct. Very naturally, there is thus given to the children an interest in facts, doctrines, etc., that is not spontaneous, but derived from the teachers. This derived interest undoubtedly enters into the choice of children. And yet, as we have seen, the forces at work in these children's natures are sufficiently strong to offset the bias induced by adult example and to turn the balance in favor of the Old Testament. *Everything considered, it is probable that the typical boy or girl from nine years to fourteen, is more attracted to the Old Testament than to the New.*

There is some light shed upon this matter by the scientific studies already referred to. If it be true that the various levels of instinct and intelligence in racial life have their outcroppings in the development of the individual child, and if we may regard the development of the Hebrew people as typical of the life of the race as a whole, ought we not to expect that the main centers of children's interest in the Bible will shift from the Old to the New Testament as manhood and womanhood approaches? To illustrate: The fundamental human instincts may be classified as *egoistic*, or selfish, and *altruistic*, or unselfish. Psychologists are agreed that racial development, as well as individual development, is away from the predominantly selfish instincts towards the predominantly unselfish instincts. Now the Old Testament scriptures appeal more especially to the former class of instincts; while the New Testament scriptures appeal rather to the latter. Fear, anger, jealously, hatred, revenge, etc., are conspicuous attributes of God and men, in the Old Testament; while sympathy, compassion, trustfulness, and love are the most prominent attributes of God and men, in the New. In short, the Bible moves from an egoistic point of view regarding God and mankind, to an increasingly altruistic point of view. The parallelism between the development of the child and the devel-

opment of the Bible is therefore clearly suggested, so far as concerns these great central instincts of the human soul.

Again, psychologists are agreed that the human race has developed from a predominantly sensori-motor type towards a predominantly associative and rational type. Primitive man lives in his senses and activities. The world is essentially a sensuous world to him. He delights in everything that appeals strongly to sight, hearing, touch, taste, and smell. This explains his fondness for bright colors, massive sounds, pungent tastes, strong odors, and the like. His motor nature is also dominant in his enjoyments, as is shown especially in his fondness for dancing, wrestling, and other feats of strength and prowess. The individual child likewise develops from the sensori-motor to the rational in its nature and interests. In vividness of sense-impressions and in constancy and variety of spontaneous movements, children surpass adults. Gilbert[1] found by testing school children that the great period of sense-development is from early childhood up to 10 or 12. The play-activities of children during the same period are very marked, as many investigations have shown. Out of this sensuous and intensely active life of children spring those interests that reveal themselves in a fondness for spectacular scenes, feats of skill and daring, and the general flesh-and-blood heroism so attractive to boys and girls. Studies made of children's reading interests bring to light the fact that in the period just preceding adolescence there is a marked fondness for the heroic in literature. Thus, Principal Atkinson,[2] of the Springfield, (Mass.) High School, found that the books read the preceding summer by an entering freshman class were largely biographical, including a range of heroes from Charlemange and Cromwell to Daniel Boone and Buffalo Bill. In general, an ideal or heroic character placed in a historic situation seemed to appeal to the largest number.

Now the Bible illustrates a similar development from the sensori-motor type of life towards the associative and rational type of life. The Old Testament abounds with spectacular scenes, such as the fight between David and Goliath, and Daniel in the lion's den; thrilling stories, such as those associated with the lives of Moses and Joseph; and heroic characters, such as Abraham and David. There is throughout a combination of scenic splendor, striking episodes, and unique personalities that impresses the senses most vividly and appeals to the love of dramatic action. It is true, of course, that the motive

[1] *Studies from the Yale Psychological Laboratory*, Vol. I, p. 80, and Vol. II, p. 90.

[2] *Proceedings of the N. E. A.*, for 1898.

of the Old Testament is religious. There was no design on the part of its writers to present a pageant of striking characters and incidents. But the method is, nevertheless, that of the primitive mind, which seizes upon the sensuous and the dramatic, rather than the rational and reflective, elements of life and religion. Here again, therefore, we find a parallelism between the development of the child and the development of the Bible.

This parallelism between the unfolding of racial consciousness as revealed in the Bible and the unfolding of the child's consciousness, has further illustration when we direct our attention to the older children included in this study. Here we find that as life ripens into adolescence, the centers of interest shift to the New Testament. From 15 years on, in the case of the boys, and from 14 years on, in the case of the girls, the preference for the latter becomes more and more marked. Now, all the studies of adolescence tend to show that this period marks a psychical, as well as a physical rebirth. The child is born out of an individualistic type of feeling into a social type of feeling; out of a sensori-motor type of intelligence into a reflective type of intelligence; out of an *egocentric* and *sensuous* life, in short, into a life *altrocentric* and *rational*. Hancock[1] has found by experimental tests that children's ability to reason increases rapidly with the approach of adolescence. Lancaster[2] shows that during this period altruistic feeling is extremely active in both sexes, revealing itself in philanthropic work of all kinds. Starbuck[3] and Gulick,[4] by statistical studies and conversion, find that the great majority of accessions to the church take place between 12 and 20 years of age. We may conclude, therefore, that just as Jesus and the Christian type of consciousness represented a new birth for the race, so does the flowering out of the altruistic and reflectively religious consciousness of adolescence represent a new birth for the individual. In other words, just as the personality of Jesus and his regimen of life sum up the ideals towards which the race is struggling, so do they sum up the ideals towards which the individual soul is struggling.

As regards the children who express no preference between the Old and the New Testament, it will be observed that they fall within those ages when the interests of the majority of the children are shifting from the Old to the New Testament. From what has already been said, it is evident that the trans-

[1] *Educational Review*, Oct., 1896.
[2] *Pedagogical Seminary*, Vol. V, pp. 61-128.
[3] *American Journal of Psychology*, Jan., 1897, and Oct., 1897.
[4] *Association Outlook*, Springfield, Mass., Vol. VIII, pp. 33-48.

formation from the egoistic, sensuous life of childhood, to the altruistic, reflective life of adolescence, must occasion a severe conflict of interests. This general conflict of interests is doubtless reflected in the inability, or disinclination, of some to choose between the Old and the New Testament. Teachers and parents often remark upon the indifference of some children during these beginning years of adolescence. As is well known in Sunday-School work, this is a period when children are kept in their classes with difficulty. The study of children reveals the fact that early adolescence is the birth-time of doubts and vacillations in conduct. Now probably these phenomena are due in part to the physical and psychical strain of the period, more intense in some children than in others. But I venture to suggest that all such indifference, doubt, or whatever it may be, is largely due to the conflict of interests incident to the transition from one type of life to another.

To conclude this discussion regarding the choice of children between the Old and the New Testament: Have we not in the development of children's interest in the main divisions of the Bible a verification of an age-long belief? The Christian world has long been familiar with the thought that the Old Testament is preparatory to the New. The historical events recorded in the former have their culmination in the latter. The prophecies springing from the life of ancient Israel anticipate the life and utterances of Him who came out of Nazareth. The laws given at Sinai have their fulfillment in the Sermon on the Mount. In short, in the words of Paul:[1] "The law was our schoolmaster to bring us unto Christ." This popular view of the relation between the Old and the New Testament is being confirmed by the conclusions of modern biblical scholarship. The Hebrew Scriptures illustrate the general laws of development in the life of a people. Each step in the unfolding of Hebrew institutions, customs, laws, and moral and religious ideals, is related to all that precedes and all that follows. The new dispensation could not come till the old had prepared at least a few choice souls for its reception. The words of Paul,[2] "When the fullness of time was come, God sent forth his Son," have thus their modern reading in the theory of human development.

§ II.

Choice among the Books of the Bible.

The data summarized under this head contribute to the same general results as those reached in the preceding section. In addition, however, they bring to light the interests of children

[1] *Epistle to the Galatians*, Chap. 3, Verse 24.
[2] *Ibid*, Chap. 4, Verse 4.

from a more distinctively educational point of view. The material of the Bible, as commonly given to children, may be classified under the following heads: (1) Historical (including the geographical), (2) prophetic, (3) gospel, and (4) doctrinal. To these may be added the literary, including the poetic and wisdom books. Following the lines of this classification, I have grouped the various books of the Bible for which the children indicated a preference, under six heads: *Historical*, *prophetic*, *poetic*, *wisdom*, *gospel*, and *doctrinal*.

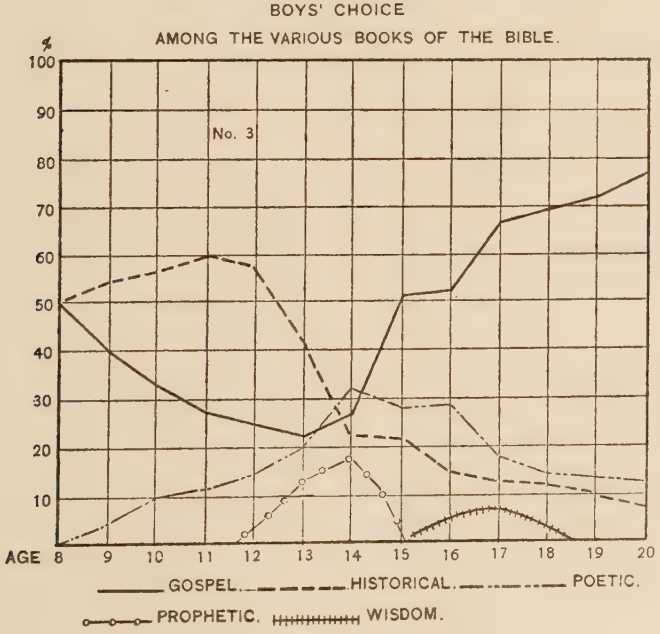
At eight years of age, the choice of the boys is equally divided between the historical and the gospel books. During the next three years, the interest in the historical books increases, reaching in the eleventh year 60%. Thereafter, the historical interest declines, falling to 22% in the fourteenth year and to 8% in the twentieth year. The interest in the gospel books falls off rapidly from the eighth to the thirteenth year, reaching at that time 22%. Then it rises steadily and rapidly to the twentieth year, when it reaches 78%. Interest in the poetic books begins at 9 years, rises steadily to the fourteenth year, when it reaches 33%, and then falls off more or less irregularly to the twentieth year, when it stands at 14%. From 12 to 15, there is some interest shown in the prophetic books, the maximum being 18% in the fourteenth year. There is also a slight interest shown in the wisdom books from 16 to 18, the maximum being reached at 17, when the percentage is seven. Not a single boy between the ages of 8 and 20 expressed a preference for a book that could be classed as doctrinal.

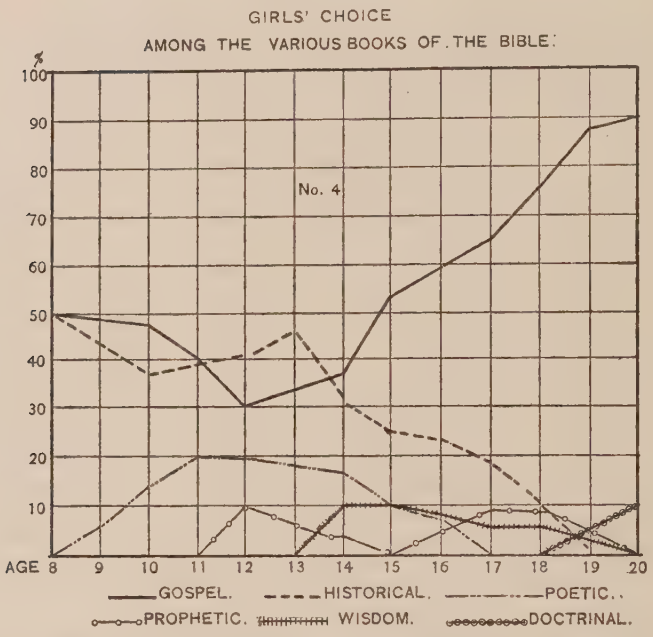
The girls also distribute their preferences equally between the historical and gospel books to start with. The historical interest then declines to 37% at 10 years, rises steadily to 46% in the 13th year, and thereafter falls to zero in the 19th year. The interest in the gospel books falls to 30% in the 12th year, and thereafter rises steadily and rapidly to 90% in the 20th year. The poetic interest appears first in the 9th year, rises to 20% in the 11th and 12th years, and then slowly declines to zero in the 17th year. Interest in the prophetic books has a somewhat uneven run from 12 to 20, reaching its maximum at 12 and again at 17. Interest in the wisdom books begins at 14, being at its maximum from that age to 15, and then declining to zero at 20. A slight interest is shown in the doctrinal books from 19 to 20, the maximum being 10%, at the latter age.

In general, therefore, we have a somewhat wide distribution of interests up to the beginning of adolescence, with some advantage in favor of the historical books, especially on the part of the boys. Literary, prophetic, and wisdom books come more into favor in the years just preceding adolescence

and maintain a somewhat prominent place throughout the early years of that period; while the gospel interest stands out conspicuously as the pre-eminent adolescent interest. These results are brought out more graphically in diagrams 3 and 4.

In interpreting the foregoing results, we have first to note that, in general, the preferences coincide with those considered in the preceding section. Thus, the preference for the historical books, which are mainly in the Old Testament, run more or less parallel with the preference for the first division of the Bible. The preference for the gospel books, which are in the New Testament, run more or less parallel with the second division of the Bible. This is not so much the case with the younger children. Here the choice of gospel books is not so general as is the choice of the New Testament as a whole, while the choice of historical books is more general than is that of the Old Testament as a whole. This disparity of choice is due, in part at least, to some children's choosing the Acts of the Apostles, which was classed among the historical books. In general, therefore, the choice among the books of the Bible at different ages has the same explanation that has already been given to account for the choice between the Old and the New Testament. The preference





of the younger children for the gospel books is due to the fact that these books contain the scenes and incidents associated with the infancy of Jesus. The preference of the older children for the historical books is due to the fact that these books contain the elements most attractive to the egoistic and sensuous natures of such children, while the choice of gospel books by adolescents is explained by reference to the general ripening of the altruistic and reflective life at that period.

However, we may look at children's choice among the books of the Bible from a somewhat different point of view and in greater detail. First, as to the choice of historical books. It has been found that the interest of public school children in history and geography is marked during the period from 9 or 10, on to 13 or 14. Mrs. Barnes[1] found that the historic sense has a rapid development during these years. Her curves are very similar to those shown in the above diagrams. She concludes that from seven years on, history becomes an increasingly attractive subject for children, though the larger historical interest does not develop, perhaps, before 11 or 12. Miss Ward,[2] who studied the geographical interests

[1] Barnes's *Studies in Education*, pp. 43-52, and 83-93.
[2] *Education*, Vol. XVIII.

of several thousand children, finds that there is a marked interest in places, especially in places that have human associations. I have studied the general school-interests of over 1,000 children in the public schools of Springfield, Mass., and find that both the historical and the geographical interests begin to be prominent at 10 years. These facts make it probable that children from 9 or 10 years, on to 13 or 14, will be naturally interested in the historical and geographical elements of the Bible. There is also another fact to be taken into account in this connection. There is evidence for believing that children during this period have especial aptitude for memorizing. All those studies that involve a constant exercise of memory, such as language, arithmetic, geography and history, are more easily taught to children at this time. Street[1] concludes from his study of language-training that children acquire languages most readily from 8 to 12 years. Bolton[2] found that the memory of children for numbers practically reaches its maximum in the grades below the high school. Shaw[3] found that the memory of children for the essential elements of a story culminated just before the high school period is reached. Scripture[4] found that the time-memory in children reaches its greatest accuracy at about 13 or 14 years. These investigations indicate that the period of life in question is peculiarly adapted for *fact-studies*, which make great demands upon the memory. And this again renders it probable that children's preference for the historical books of the Bible is based, in part, upon certain special intellectual aptitudes.

Next, as to the choice of prophetic and literary books. "Prophecy" consists of two things as applied to the Bible: (1) The revelation of coming events; and (2) The speaking forth of the deeper truths of life. Perhaps, in the last analysis, these two things are one, but we ordinarily consider them distinct. Now, adolesence is the "Golden Age" of prophecy. It is then that the individual consciousness is reborn into the consciousness of the race. The deeper truths of existence are yearned for and glimpsed. There is a moral and religious ferment, and the loftiest and the most sordid ideals struggle for mastery. Moreover, it is then that the human soul looks most anxiously into the future. Perhaps it looks farthest into the future. Certainly it tries then, as at no other time, to learn its horoscope. Witness the idealizing, the day-dreaming, the fortune-telling devices of young peo-

[1] *Pedagogical Seminary*, Vol. IV, pp. 269-293.
[2] *American Journal of Psychology*, Vol. IV.
[3] *Pedagogical Seminary*, Vol. IV, pp. 61-78.
[4] *Thinking, Feeling, Doing*, p. 251.

ple. Lancaster[1] in his study of the psychology and pedagogy of adolescence, has collected data illustrating both these aspects of the prophetic spirit. The longing for the more vital truths of life, and the far-looking into the future, recur again and again in the returns received from the youth of both sexes. Adolescence is also the period when literary feeling and aspirations ripen. These are offshoots of the æsthetic nature, and studies of adolescent life bring to light the fact that all the forms of æsthetic feeling and activity begin to crop out early in this period. In the study of children's school-interests already referred to, I have found that the interest in painting, drawing and music increases rapidly from 12 years on. Lancaster found that of 100 actors, 50 poets, 100 musicians, 50 artists, and 100 writers, the majority had achieved success in their art before the age of 20, showing that the life of æsthetic feeling and idealism is well developed in early adolesence. The preference of children for the prophetic and literary books of the Bible, in the early adolescent years, is, therefore, doubtless an expression of more general moral and æsthetic interests.

Finally, as to the choice of gospel books: This is pre-eminently the choice of the adolescent. From what has already been said, it is evident that adolescence needs, and seeks, above everything else, some kind of a philosophy and regimen of life. Life has become a thing fraught with a new but vague meaning; the struggle is to make its meaning clear. Life has become a larger, richer thing; the struggle is to learn the method by which its largeness and richness may be personally realized. The quickening of moral feeling leads to self-scrutiny and an apprehension of more or less friction between the self and the best environments. The quickening of the religious feelings begets a desire to get adjusted to the largest and best ideals. The quickening of the sense of life, as lived through others and for others, awakens the impulse to become a part of the great cosmic struggle for more complete existence. In the gospels is found the Christian philosophy of life; and in the gospels is found the Christian regimen of life, in its broad outlines. For the gospels reveal the personality of One who "came that they might have life and that they might have it more abundantly," and Christian philosophy sums itself up in personal character. And the gospels reveal broadly the Christian regimen of life, for this is simply to follow where He leads. It is not surprising, therefore, that, when the meaning and method of life are sought with such earnest zest as during

[1] *Pedagogical Seminary*, Vol. V, pp. 61-128.

the adolescent years, the Christian explanation of what life is, and how it may be lived, should be of interest.

§ III.

Choice of Bible Scenes, Stories and Characters.

The data collected under this head bear upon three points: (1) The scenes, stories, and characters that are most liked; (2) The development of interest in the scenic, narrative, and personal elements; and (3) The comparative interest in the three classes of elements at different ages. Preferences were shown for 57 different Bible scenes, 26 from the Old Testament and 31 from the new. Of these, the fifteen most popular scenes are the following:

		BOYS.	GIRLS.	TOTAL.
1.	Daniel in the Lion's Den,	53	52	105
2.	The Crucifixion,	45	33	78
3.	The Birth of Jesus,	27	38	65
4.	Jesus Blessing Little Children,	13	42	55
5.	The Lord's Supper,	30	23	53
6.	Feeding the Five Thousand,	25	24	49
7.	Jesus Walking on the Sea,	10	27	37
8.	The Resurrection,	18	18	36
9.	The finding of Moses,	13	21	34
10.	The Raising of Lazarus,	8	24	32
11.	The Transfiguration,	10	21	31
12.	Jesus before the Wise Men,	5	20	25
13.	Jesus' Triumphal Entry,	12	13	25
14.	The Woman at the Well,	15	10	25
15.	The Stilling of the Tempest,	12	12	24

It will be observed that all but two of these fifteen scenes are from the New Testament. Probably this is to be accounted for, in part, by the influence of pictures. Many of the scenes mentioned are the commonest subjects of the masterpieces of Christian art, reproductions of which appear in pictorial Bibles, Sunday-School literature, and the like. It is also due, undoubtedly, to the intrinsic attractiveness of the personality and works of Jesus. All of the scenes from the New Testament have him as their central figure, three presenting him as a child or in connection with children. The most popular scene of all, however, is Daniel in the Lions' Den. This is unquestionably one of the most graphic scenes in the Bible when given pictorial representation, as it often is, in religious literature. This fact is sufficient to account for its popularity. The popularity of the crucifixion is doubtless due, in part, to Christian art and to the emphasis placed in

religious teaching upon the death of Jesus. It is also, probably, due to a lurking fondness in some children for cruel and tragic scenes. One boy, in describing his preferences, said, "I like anything that has murder and such things in it." It is to be hoped that not many children share this feeling. But there is here suggested a possibility that should inspire caution in those who are disposed to dwell upon such scenes in religious teaching.

The choice of Bible stories has a total range of 38, twenty-three of these being drawn from the Old Testament and 15 from the New. The most popular of these are the following:

		BOYS.	GIRLS.	TOTAL.
1.	The Selling of Joseph,	48	99	147
2.	David and Goliath,	50	50	100
3.	Daniel and the Assyrian Kings,	43	41	84
4.	Moses and Pharoah's Daughter,	25	44	69
5.	The Story of Ruth,	10	41	51
6.	Story of Jesus' Birth,	20	29	49
7.	The Prodigal Son,	15	23	38
8.	Story of Noah's Ark,	20	18	38
9.	The Calling of Samuel,	16	16	32
10.	Samson and the Philistines,	20	7	27
11.	The Flight into Egypt,	3	15	18
12.	Jonah and the Whale,	10	7	17
13.	Story of Esther,	7	10	17
14.	Changing Water into Wine,	5	12	17
15.	The Good Samaritan,	5	11	16

It appears from this that Old Testament stories are more popular than are New Testament stories, the five standing highest in the list being drawn from the Old Testament. These five stories have all the essential elements that make such productions attractive to the young,—heroic characters, heroic situations, heroic actions. The same is true, in a somewhat less degree, of the remaining five stories drawn from the Old Testament. From all that has been said about the egoistic sensuous life of children in the earlier years, we are prepared to understand why the story-interest should center in that division of the Bible. The most popular story in the New Testament is that of Jesus' birth, many of the youngest children choosing this, as we might expect from what has preceded. But one story in this group of fifteen is based upon a miracle, and this probably owed its interest for children to the human elements involved. In general, few children expressed a liking for miracles.

A total of 45 Bible characters were chosen—25 Old Testament

characters and 20 New Testament characters. The fifteen most popular are the following:

		BOYS.	GIRLS.	TOTAL.
1.	John the Disciple,	48	104	152
2.	Peter,	48	77	125
3.	Jesus,	48	66	114
4.	David,	49	65	114
5.	Moses,	44	59	103
6.	Paul,	31	63	94
7.	Joseph,	32	43	75
8.	Daniel,	19	36	55
9.	Samuel,	13	17	30
10.	Ruth,	7	17	24
11.	Elijah,	16	8	24
12.	Abraham,	10	11	21
13.	Solomon,	11	9	20
14.	John the Baptist,	8	7	15
15.	Mary, the Mother of Jesus,	4	11	15

From the foregoing, it appears the three characters most often chosen, are New Testament characters. The boys distribute their preferences equally among these. A much larger percentage of the girls, however, choose John the Disciple, while more of the girls choose Peter than Jesus. The qualities found in John are sufficient to account for his popularity. He is a gentle, loving, yet manly character. He is doubtless also loved for the sake of his Master, whom he so fittingly portrayed in the fourth gospel. The prominence of Peter is not so easily understood. Aside from his rugged, virile manhood, we have probably to take into account his unique place in Jesus' regard and the distinction he has enjoyed in church-history. It may seem strange that Jesus should rank lowest in the total preferences shown for these three New Testament characters. I am inclined to believe that this is not accidental, however. It is doubtful if the younger children at least were influenced by the theological estimate of Jesus. They probably see only the human Jesus, and if they think of Jesus as a man, when they are asked to express a choice between him and another man, they do so with the same candor that they show in other matters. I doubt not that Jesus is naturally the most attractive character in the Bible for children of all ages. This study shows that, as a child, he is more often chosen by the younger children than is any other character. It seems to me probable that this preference would continue among older children if the latter were allowed spontaneously to grow into an appreciation of the adult Jesus. But religious teachers are usually so anxious to present Jesus to children as a divine per-

son, and children's minds are so unable to grasp the mystical implications of this dogma, that the human Jesus is taken away from them and the divine Jesus is made an intellectual abstraction. The result is, that the child can love neither the one nor the other. This religious forcing will inevitably shift the interest of a child to a character whose simple humanity it can understand and love. I believe this will account for the preference which so large a percentage of the girls show for John.

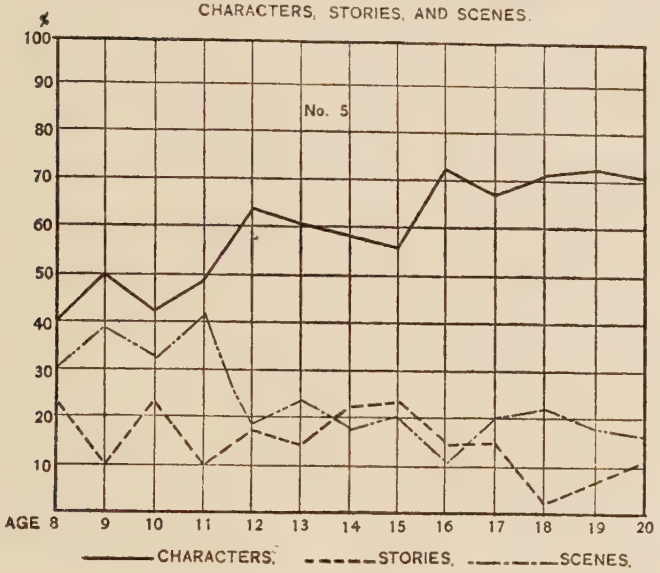
Among the Old Testament characters chosen, the most prominent are David, Moses, Joseph and Daniel. This is what we would expect from what we have already learned of children's preference for the heroic and dramatic elements of the Old Testament.

As regards the development of interest in the scenic, narrative, and personal elements of the Bible, we find: (1) That, in general, the interest in scenes and stories is somewhat more marked in the younger children than in the older; and (2) that the interest in characters increases with advancing age. Reference to diagrams 5 and 6 makes this sufficiently clear. From these diagrams, it will also be observed that the comparative interest in the three classes of elements at different ages is overwhelmingly in favor of the characters. *The larger percentage of children of all ages are attracted more strongly to the personal elements of the Bible than to any other.* This is shown not alone by the preference expressed for characters, but also by the choice of scenes and narratives themselves. Thus, of the 57 scenes mentioned, all but four have their center of interest in persons; while of the 38 Bible stories selected, all but three owe their interest to the characters that take part in them.

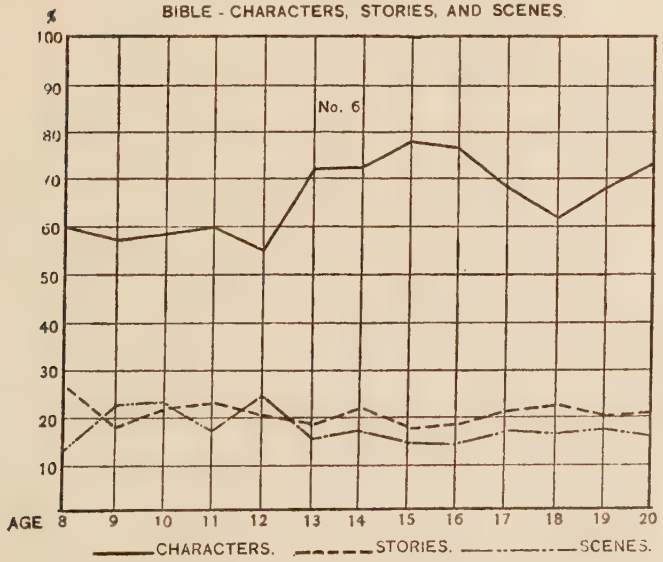
Sufficient has already been said in this and preceding sections to explain most of the above results. The overwhelming interest of children of all ages in the personal elements of the Bible deserves further discussion, however. The human interest of children has been generally observed by those who have studied the psychology of childhood. To adapt the sentiment of the Latin poet, nothing of human concern is foreign to the child. The first efforts of the little boy to realize his artistic ideals are usually pictures of men. The principal play-activities are reproductions of the lives of adult men and women. The reading interests of older children run mainly along the line of biography, or fiction in which the character element is prominent. Atkinson,[1] in commenting

[1] *A Year's Study of the Entering Pupils of the Springfield, (Mass.) High School, (Proc. N. E. A.*, 1898).

COMPARATIVE CHOICE, AMONG BOYS, OF BIBLE-CHARACTERS, STORIES, AND SCENES.



COMPARATIVE CHOICE, AMONG GIRLS, OF BIBLE - CHARACTERS, STORIES, AND SCENES.



upon the reading-interest of boys at the high school period, says: "The Liking for biography is remarkable. One boy read the lives of Grant, Garfield, Sherman and Blaine. Another read the lives of Charlemagne, Cromwell, David Crockett, Daniel Boone, and Buffalo Bill." Mrs. Barnes,[1] from her study of the historic sense of children, concludes that history should primarily be taught through the biographies of heroic and striking characters. Miss Ward,[2] who has investigated the geographical interests of children, finds that five-sixths of the preferences for towns, cities or countries reveal a human interest. Miss Ward mentions Anna Buckbee as having made a similar study to her own, with similar results, and concludes by saying: "Does not the strong human interest shown by children lead us to unite with Miss Buckbee in asking if this does not show that the earth should be taught as the home of man?" The sentiment thus expressed, is rapidly becoming general in educational circles. History, geography, literature, and the elementary sciences are being taught more and more from the view-point of their human interest. In the light of such facts, the significance of children's predominant interest in the personal elements of the Bible becomes clear. Have we not here a suggestion that the Bible, too, may best be given to children through the medium of personal incident and biography?

§ IV.

Development of Interest in Jesus.

Finally, we may examine the data bearing upon children's interest in Bible characters, with a view to discovering whether there is any change from period to period in their regard for Jesus. For purposes of comparison, it will be helpful to make the development of interest in John the Disciple, and David, the most popular characters in the New and the Old Testament, respectively. First of all, we should remember that what has been said about little children's fondness for the infant Jesus will not hold to the same extent in the choice of Jesus as an adult character. In the former case, Jesus was thought of in the environment of childhood. His attractiveness for children was revealed through their fondness for the scenes and incidents connected with that period. In the latter case, he is thought of in relation to other adults and to adult environments.

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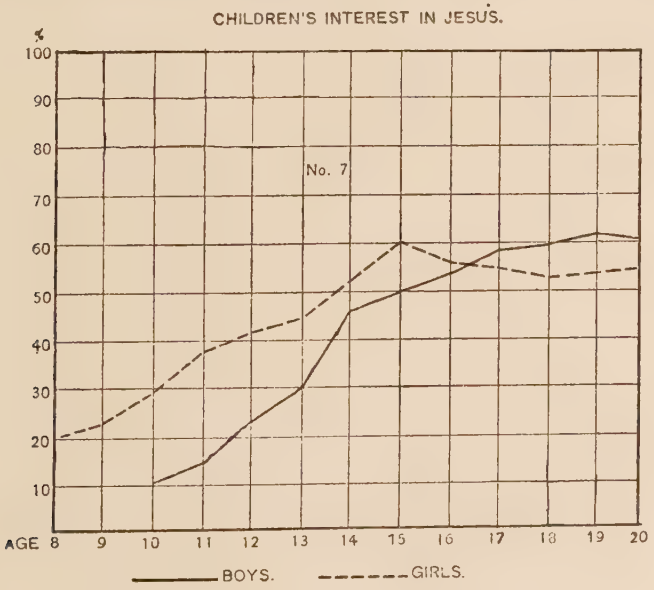
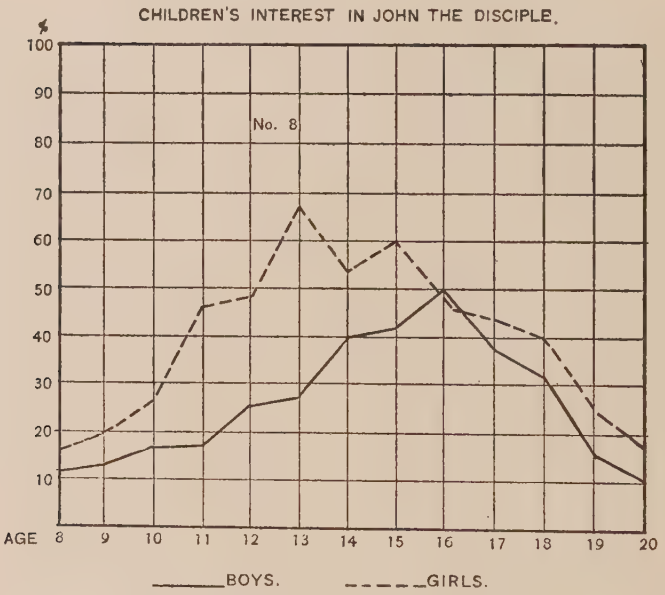
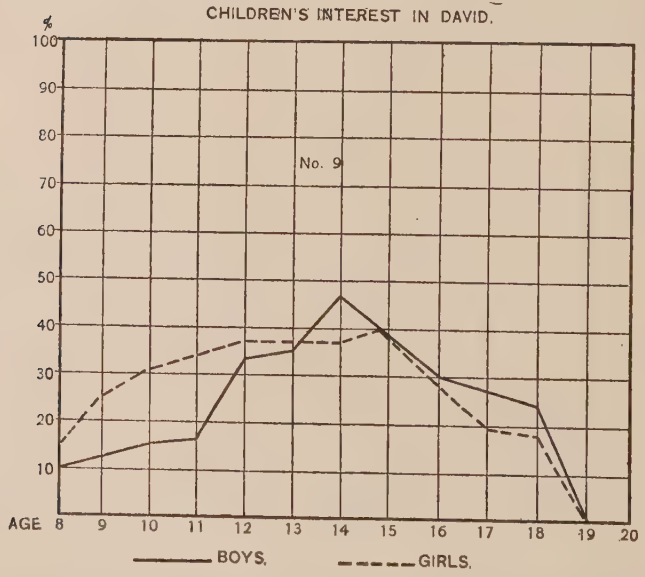
[1] *Barnes's Studies in Education*, p. 90.
[2] *Education*, Vol. XVIII.

The boys express no preference for Jesus until the 10th year. Beginning at this age with 10%, their interest increases somewhat rapidly up to 14, and then less rapidly throughout the remaining years included in the study. From 17 years on, approximately, 60% of the boys include Jesus in their list of preferences. The girls' interest begins with 20%, at 8 years, and rises steadily up to the 15th year, when it stands at 60%. Thereafter, it declines somewhat, although remaining throughout above 50%. Generally speaking, therefore, the interest in Jesus is an *adolescent* interest, manifesting itself strongly at the beginning of that period and continuing throughout. The interest in John the Disciple, on the other hand, covers a shorter period. It is mainly an interest of *early adolescence*. In the case of the girls, it rises sharply from 10 years on, culminating at 13, with 68%. The boys' interest rises less abruptly, reaching its culmination in the 16th year, with 50%. Thereafter, in both both boys and girls, the curve of interest falls rapidly. Finally, the interest in David is, in general, a *pre-adolescent* interest. It is strongly manifested from 9 to 12, reaching approximately its highest point at the latter age, in the case of the girls, and then remaining constant up to 15, when it falls off rapidly. The boys' interest culminates at 14, when it also declines, the percentage of both sexes falling to zero in the 19th year. These results will appear more clearly in the following diagrams.







We have, therefore, the outstanding fact that children's interest in Jesus, as an adult, is an adolescent interest. This is what we should expect from the numerous tendencies of

this period of life, elsewhere referred to. In considering the general interest of adolescents in the New Testament, we found that this runs parallel with the ripening of the altruistic and reflective consciousness. Thus, it is the opinion of those who have studied the religious aspects of adolescence that the character and teaching of Jesus appeal strongly to the adolescent mind. Lancaster[1] says: "Adolescents will sacrifice and perform duty for the Master as at no other time of life. Instruction should take the form of an appeal to free, spontaneous loyalty to the King, and Jesus should be presented as the ideal, heroic God-man. His self-sacrifice and self-denial, his suffering and passion may be taught with the assurance that they will appeal most strongly to the soul-life of the adolescents."

This intrinsic attractiveness of the personality of Jesus for young people, appears in what is called conversion. The meaning attached to the latter by evangelical Christianity is essentially the acceptance of Jesus as a personal Saviour. As has already been pointed out, statistical studies of conversion show that this is an adolescent phenomenon. Starbuck[2] found that the curve of conversion reached its maximum at 16, for both sexes, though a considerable percentage of conversions among the girls took place in the 13th year. Gulick[3] found that the maximum for boys was reached in the 18th year, with a large number falling in the 16th year also. In general, these investigations show that most young people who enter the church, do so in the first half of adolescent life. This virtually coincides with the period of maximum interest in Jesus, as shown in diagram 7. The attractiveness of Jesus for adolescents is therefore but one of a large class of phenomena, which the investigation of adolescent life is bringing to light. It would seem to afford another and weighty reason for concluding that this period of life is the time when the human soul spontaneously opens to the ideals of character and conduct which Jesus represents.

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[1] *The Psychology and Pedagogy of Adolescence, Pedagogical Seminary*, Vol. V, p. 128.
[2] *Psychology of Religion.*
[3] *Association Outlook*, Vol. VIII, pp. 33-48.

CHAPTER III.

Conclusion.

The most general conclusion growing out of this study of children's Bible interests, is that it confirms the results obtained from similar studies along other lines, and is, in turn, confirmed by them. This fact goes far towards offsetting any suspicion as to method or completeness of data. It cannot be accidental that children's interest in the Old Testament falls mainly in a period of life which experimental studies of children's mental aptitudes, as well as their historical, geographical, reading, play and other interests, have shown to be characterized by just the instinctive tendencies and intellectual qualities that the material of the Old Testament most powerfully appeals to. Nor can it be accidental that adolescent interest in the Gospels, and in Jesus, runs parallel with the general altruistic and religious interests brought to light by the various studies of adolescence. It seems to me, therefore, that this concurrence of results does two things: (1) It vindicates the point of view and method of the present study; and (2) it serves to strengthen the conclusions which the study suggests. These conclusions are as follows:

1. Children up to 8 or 9 years are more interested in the portions of the New Testament which give accounts of the birth and childhood of Jesus. They are interested, however, in Old Testament stories relating to the childhood or youth of characters like Moses, Samuel, Joseph and David. This suggests that children of this age should be given instruction in the Bible from the view-point of the childhood of the Bible, beginning with Jesus and using the others for purposes of comparative study. Of course, such material would serve only as the nucleus of the primary curriculum. Around this could be grouped a great diversity of material derived from studies in nature, art, industries, and other departments of human life, so selected and presented as to give the children a religious outlook upon their environments. A great deal of the material of the corresponding grades of the public schools conld be appropriated, and given an ethical and religious interpretation. This could be done most effectively, as it seems to me, through the medium of this great world-soul, who summed up in his character and life all the most fundamental human interests, who came into the world through the gateway of childhood, and who said: "Suffer little children, and forbid them not, to come unto me, for of such is the kingdom of heaven."

2. From 9 years, on to 13 or 14, children are more interested in the Old Testament. This interest shows itself more especially in a fondness for the historical books, the literary and prophetic books, and the heroic and dramatic elements gen-

erally. This suggests that the religious curriculum for this period should occupy itself with the history, geography, literature, prophecy, and general moral and religious contents of the first division of the Bible. It would coincide with the grades of public school work above the primary and below the high school, in that it would deal essentially with *fact-studies*. It would really mark the beginning of formal biblical instruction, the instruction of the earlier period being more general and unsystematic. The order of material would be: (1) history and geography, (2) literature, and (3) prophecy. The moral and religious elements would be involved throughout. Incidentally, the history of other ancient peoples, and, at least the elements of comparative religion could be taught. Much might profitably be made of the manners and customs, and the social life, especially as reflected in the industries, religious and political ceremonials, and feats of arms. Sacred art might be brought into requisition to aid in the study of characters and customs. This is the period for memorizing selected passages of scripture, such as Psalms, Proverbs, etc.

3. Children in the adolescent period show a decided interest in the New Testament, especially in the four Gospels and the Acts of the Apostles. They also show a very special interest in Jesus and the principal Disciples. The interest in John the Disciple, is an early adolescent interest, while the interest in Jesus culminates somewhat later, and is sustained throughout. This suggests that the material of instruction for adolescence should be derived largely from the New Testament. It would center in Jesus and his teachings, the principal Disciples being studied incidentally. The study of types of Christian character and the development of Christian thought and institutions might very profitably be extended to the later history of Christianity. Every possible side-light of history, literature, art and science could be utilized in revealing the ideals of Christian manhood and Christian society. The religious instruction of this period should, it seems to me, aim to establish a correct personal relationship with the Divine Father and with society. Altruistic and religious feelings should be made use of to stimulate and guide a spirit of co-operation with God and men.

4. At all ages, children feel more interest in persons than in any other elements of the Bible. Even Bible scenes and stories appeal to them mainly through the man, woman, or child that is the center of the scene or the principal actor in the story. This suggests that the Bible should be given to children, of all ages, through its personal element. Thus, the Bible should be given to young children through the child Jesus. Everything in either the Old or the New Testament that could be properly used to make this human child Jesus intelligible and lovable should be employed. No theological

explanation of his birth, nature, or mission need be attempted. The spontaneous love of one child for another may be trusted to give Jesus a secure place in the affections of children, if he is presented simply and attractively. And it is better that the affections should be enlisted in this matter than the intellect. God, whom the little child should have already come to know through its sense of causality as instructed by older people, may be given anew to it as the Father of this Child of Bethlehem, whom so large a portion of mankind love and serve. But, whatever the theological belief of parents or teachers, there can be no economy, at this early period, in making God and Jesus the persons of a mystical trinity. They should be kept separate in the child's thought, as Father and Child, each standing for what such terms connote. Any attempt to invest Jesus with the mysteries of divine incarnation and sacrificial function must, it seems to me, detract from his simplicity and lovableness in the estimation of little children.

Again, the Bible should be given to children from eight or nine years, on to thirteen or fourteen, through the heroes of the Old Testament. These heroes may be selected with especial reference to their importance to history or prophecy, or with reference to their moral and religious example. The number is sufficiently large to give ample choice in these directions. When such a selection of heroes has been made, their characters, deeds, and sayings may become the media through which the children shall be taught Hebrew history and geography, moral and religious principles, and anything else that the Old Testament can supply for purposes of religious instruction. Finally, the Bible should be given to adolescents through Jesus as an adult, and, incidentally, through the disciples and apostles who have interpreted his character and teachings. Here, again, all historical or geographical material, all doctrines and exhortations, all individual and social elements of ethics or religion that the New Testament presents, should be taught through the personal medium most closely identified with them. In Trinitarian circles, this would be the time to give the theological interpretation of Jesus' character and function. Having established the human Jesus in the affections of childhood, and having guided the child throughout the intervening years along the lines of a healthy, normal life which finds the fulfillment of its ideals in this same Jesus, any doctrines of the Godhead or the atonement that may seem necessary to a religious philosophy, may be added. In any case, the spontaneous interest in Jesus should be seized upon to bring the adolescent lives into harmony with him, and to make his teachings effective in establishing a correct regimen of conduct as it affects the self and others.

THE COLLECTING INSTINCT.

CAROLINE FREAR BURK, San Francisco.

The "treasures" of children are cherished by them with feelings of sacredness, pride and importance which can hardly be appreciated by the adult, unless he be blessed with a bit of foolish sentiment himself or possessed of a vivid memory penetrating back into the recesses of his own childish heart. Even more than in the single object of affection,—the pet chicken, the especial pride of a top, the beloved scrap of colored ribbon, the little shining stone fostered almost as a fetich,—the "treasure" feeling in children seems to expand and thrive especially when bestowed upon a collection of objects, objects which are not only a possession, like the single cherished fetich, but a seemingly great possession, commanding the admiration which repetition and numbers always invoke, and a possession, too, that may be compared proudly, or at least stimulatingly, with similar possessions of childish compeers and rivals. The single fetich treasure twines about the heart in a more or less indefinable, unreasoning sort of way. It strikes a cord of fancy or sentiment, perhaps through some association, or perhaps merely as a fragment seemingly unrelated to any other feeling and not based on any reason. But the collection treasure arouses, besides, and along with, the tender feeling or feeling of kinship and close relationship between "me" and "my possession," a more objective interest, based on more definable, even if more varied motives.

A study of the collecting instinct, craze, fad or interest, however one may choose to designate this wide-spread phenomenon, is the object of this paper. Mrs. Annie Howes Barus[1] has given an interesting biography, recorded from observation, of her own little boy's passion for bottles, beginning in his first year as a fear and mystery fetich-feeling for a particular huge green bottle, and developing into an affection for bottles in general and love of many bottles. Professor Earl Barnes[2] contributes a reminiscent study based on the recollections of ninety-two adults, and

[1] The History of a Child's Passion. The Woman's Anthropological Society, Washington, D. C. Bulletin No. IV.

[2] Studies in Education, No. IV, p. 144.

Sarah Wiltse and Dr. G. Stanley Hall[1] have also made a study from a large amount of data.

The data which I wish to present here have been gotten from the reports of children themselves. A certain 5th grade in the schools of Santa Barbara, California, exhibited in connection with their nature study and history work a very lively interest in collections, and all the children were anxious to tell of their birds' eggs, their Chinese coins, their Indian arrows, and to bring specimens to the schoolroom. This collection interest had developed in the children spontaneously and its extent and intensity were a surprise. In order to gain more definite information in regard to the nature of this interest, the children were asked to make out a list of all the things they had ever collected, tell when they began and when they stopped any collection, give the number of objects in each, and tell also various things about them, as will be discussed later. The results proved so fertile that a set of questions was made out and given to most of the teachers in the city to be filled out by the children, and a similar set was gathered from school children of Santa Rosa. Several days were allowed in order that they might have time carefully to think up, look up and count up their collections, and jog the memory of their mammas, also, as to their past collections. In some cases, as when an enterprising youth of ten years recorded sixty-six collections, fifty-five of them still continuing, the teacher herself consulted the mother and made sure that all were verified.

Records were obtained from 510 Santa Barbara children and 704 Santa Rosa children, in all 607 boys and 607 girls, or 1,214 children.

The universality of the collecting interest was strikingly brought out. Only ten per cent. of the boys and nine per cent. of the girls were not actively making collections at the time, while but three per cent. of the boys and one per cent. of the girls said they had never made any collections, slightly fewer girls than boys being exempt.

The intensity of the collecting interest is shown in the number of collections made, as given in the following tables (I and II).

TABLE I.

Present and Past Collections.

Boys.	2,874	Collections.	Average to the boy.		4.7	Collections.
Girls.	3,261	"	"	girl.	5.4	"
Children.	6,135	"	"	child.	5.1	"

[1] *Ped. Sem.*, pp. 234–5.

TABLE II.

Present or Active Collections.

Boys.	1,937	Collections.	Average to the boy.		3.2	Collections.
Girls.	2,115	"	"	" girl.	3.5	"
Children.	4,052	"	"	" child.	3.3	"

It will be seen that the girls slightly exceed the boys in the average number of collections made, as well as in the number of them making collections.

That the children on the average were in process of making from three to four actual collections bespeaks a considerable amount of energy being drained off through the channels of this instinct. But the generalities of the average cover up the "spots" where the instinct breaks out with remarkable intensity. There were six boys and ten girls making nine collections each; seven boys and four girls making ten collections each; three boys and five girls making eleven collections each; one boy and two girls making twelve collections each; one boy making thirteen collections; one girl making fourteen collections; one, sixteen; one, eighteen; one, thirty-two; and one boy making fifty-five.

The age development in regard to the number of collections made is worthy of notice. The following table (III) and chart (I) show the variation of the average number of actively continuing collections, for ages from 6 to 17 years.

TABLE III.

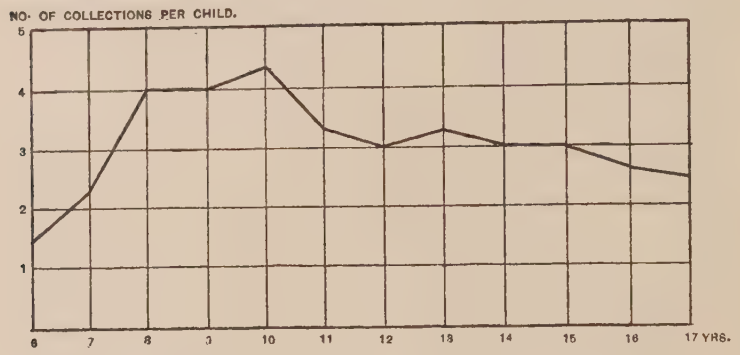
Average Number of Active Collections for Different Ages.

Age.	Average per Boy.	Average per Girl.	Average per Child.
6 years.	1.2	1.9	1.4 Collections.
7 "	2.1	2.6	2.3 "
8 "	3.5	4.5	4. "
9 "	3.9	4.1	4. "
10 "	4.4	4.4	4.4 "
11 "	3.4	3.3	3.3 "
12 "	3.	3.	3. "
13 "	3.5	3.4	3.4 "
14 "	3.	3.	3. "
15 "	2.7	3.2	3. "
16 "	2.1	3.3	2.8 "
17 "	2.	3.	2.5 "

The impulse to collect, as shown by the reports on past collections, manifests itself at an early age, at least by three years. It develops rapidly from six years on and reaches its greatest intensity from eight to ten or eleven years, being strongest at ten years; then it continues with moderate force into adolescence. From fourteen years on the boys show declining inter-

CHART I.

Average Number of Active Collections per Child for Different Ages.



est, while the interest of girls continues more steadily. The high-tide mark is shown by the average number of collections at ten years, being then 4.4 collections for both boys and girls.

The question as to what children collect, is best answered by asking what they do not collect. The consciously applied genius of man could hardly concoct a more numerous and diversified set of objects,—objects ranging from the utterly absurd, the useless, the grotesque, to the really valuable; ranging from the commonest, meanest things to the rarest; objects appealing to all sorts of interests and allied with a variety of motives.

The following alphabetical list of nearly three hundred varieties of collections serves well to impress the vagaries of the collecting instinct, to show how, in its intensity, it squeezes into any little channel that circumstance may open up. The classification is of course somewhat arbitrary. I have given as far as possible the specific collections as reported by the children. For instance, doll-buggies, doll-dresses, doll-dishes, doll-hats, and doll-quilts might be summed up under doll-belongings, but the children gave them separately. While, on the other hand, the term, pictures, might be divided into numerous classes, as funny pictures, pictures of noted men, of actresses, of poets, of singers, of babies, of animals, of flowers, war pictures, war-ship pictures, fashion pictures, mythological pictures, all of which were mentioned by the children. But as the majority who collected pictures simply gave the general term, I have combined under it all these special terms.

The boys and girls show about an equal variety in kinds of collections, the former making 215 different kinds and the latter 214.

TABLE IV.

List of Collections with number of Boys and Girls making each kind.

	BOYS.	GIRLS.
Acorns,	4	7
Advice (bits of),	1	
Animals,	1	
Antlers (deer),	2	1
Arrowheads,	19	2
Autographs,	4	19
Autograph sentiments,		3
Badges,	23	15
Baldheaded men counted,		1
Balls,	1	
Beads,	5	39
Beans,	2	4
Bees,	1	1
Beetles,	1	1
Belts,		1
Bills,		1
Birds,	16	5
Birds' beaks and claws,	1	
" eggs,	289	81
" nests,	17	7
" wings,	2	
Blocks,	4	
Bones,	5	5
Books,	40	70
" (advertisement),		1
" (school),		1
" (scrap),	6	15
" (song),		2
Booklets,		1
Bottles,	9	13
Bottles (perfume),		1
Boxes,	12	16
Bracelets,		2
Brass,	1	
Breastpins,		1
Bullets,	2	
Butterflies,	29	20
Buttons,	84	154
" (picture),	39	32
" (cuff),	1	1
Calendars,	7	15
Candies,		7
Cans,	1	
Cards (calling),		3
" (cigarette),	38	16
" (election),	36	9
" (merit),		1
" (picture),	57	204
" (report),		1
" (tally),		1
Cartridges,	13	2
Caterpillars,	1	2
Cats,	7	3
Certificates,		1
Chalk,	4	2
Charm-strings,	1	3
Chickens,	7	3
Chillicotes,	8	5
China (painted),		1
Chips,	1	
Christmas berries,		1
Chrysanthemums,		1
Cigar-box papers,	3	
Cigar-holders,		1
" ribbons,	6	11
" tags,	389	149
" tins,	1	
" stamps,	4	
Clay,		1
Clocks,	1	
Clothes-pins,	1	1
Clothes-stamps,		1
Clover (four leaf),		2
Cocoons,		2
Coins,	41	28
Compositions,		1
Cookies,		1
Coupons,	14	9
Cows,	1	
Crabs,	2	
Crystals,	4	
Cups and saucers,	3	14
Curios (Alaskan, Indian, etc.),	29	17
Dishes,	2	15
" (broken),		11
Dolls,	1	95
" (paper),	4	106
Doll buggies,		1
" clothes,		17
" dishes,		1
" hats,		1
" quilts,		1
Dogs,	6	2
" (rubber),	1	
Dragonflies,		1
Drawings,	2	6
Dresses,		2
Ducks,	1	
Ear-rings,		2
Easter eggs,	1	3
Envelopes,	1	
Envelope rings,	1	2
Fans,		4
Feathers,	6	8
Ferns,	7	29
Fish,	7	6

	Boys.	Girls.
Fish hooks,	1	
Flags,	8	12
Flint,	18	4
Flowers (pressed),	16	58
" (paper),		4
Fossils,		2
Frogs,	3	1
Furs,	1	1
Games,	1	3
Glass (pieces of),	17	35
Glasses,		4
Goats,	1	
Gopher skins,		1
Grass,	1	3
Guns,	1	
Hair (locks of),	5	17
Handkerchiefs,	1	1
Hats,	2	1
Hat-tips counted,		4
History scraps,	1	
Horses,	1	
Horse hair chains,	12	6
Horse shoes,	16	7
" shoe nails,	4	
Horses counted, white,	6	41
Insects,	9	4
Invitations,		1
Iron,	3	
Jackstones,		1
Jewelry,		8
Jugs,		1
Keys,	1	
Kites,	2	
Knives,	7	
Knots in ropes,	1	
Labels,	7	
Lace,		4
Lead,	4	
Leaves,	40	68
" (decayed),		1
Letters,	4	10
Lizards,	1	
Magazines,	4	9
Maps,	3	1
Marbles,	221	136
" (agates),	25	3
Match-box tops,	1	
Matches,	1	1
Medals,	2	1
Mice,	1	
Minerals,	22	10
Money,	10	10
Monkeys,	1	
Monograms,		5
Moss (sea),	19	58
" (wood),	3	7
Music,	1	2
Nails,	3	1
Names (authors'),		1
" (of books read),	1	
" (Christian),		1
" (of legal holidays),	1	
Napkins,	2	24
Neckties,	2	
Needles,	1	1
Newspapers,	5	4
Newspaper covers,	1	
" scraps,	1	9
Nickles,	1	
Nuts (Chinese),	1	
Nutshells,	1	
Oak balls,	1	
Oil cans,	2	
Opals,		1
Padlocks,	1	
Paints,	1	
Pans,	1	
Pant-guards,	1	
Paper (colored),	1	10
" (tissue),	2	4
Paper articles,		1
Papers (French),		1
" (school-work),	1	5
" (Sunday school),	1	7
" (perfect),	1	
Peas (wild),	2	
Pebbles,	15	41
Pencils,	2	6
Pennies,	1	5
Pens,		3
Periwinkles,	1	
Pets,		3
Photographs,	8	25
Pictures,	58	132
" (kodak),	4	13
Pieces of calico, cloth, silk, velvet,	6	110
Pieces for quilts,		14
Pinks,	1	
Pigeons,	25	8
Pins,	10	31
" (hat),	2	3
" (scarf),	1	
" (stick),		6
Plants,	7	19
Poems,	2	23
Polliwogs,		2
Postal cards,	1	
Posters,		2

	Boys.	Girls.
Postmarks,	2	8
Programmes (theater, dance, etc.),	4	5
Puzzles,	2	4
Quartz,	2	
Rabbits,	27	12
Rabbit ears,	1	
Rags,	2	16
Rats (white),	6	1
Red headed girls counted,		1
Ribbons,	8	58
" (men-of-war),	1	
Riddles,		3
Rings,		3
Rocks,	67	53
Rose petals,		4
Rubbers,	1	
Rubber (sheet),		1
Sachet-bags,		1
Sacks,	5	1
Sayings (witty),	2	7
" (of all descriptions),		6
Seals,		3
Seeds,	6	8
Shark eggs,	1	
Shells,	113	223
Shoes (old),		1
Shot,		1
Silk-worms,	2	2
Skeletons,	1	
Skins,	3	
" (rattlesnake),	1	
Sloyd models,	11	
" sewing,		4
Snake eggs,	1	1
Soils,		1
Songs,	1	16
Souvenirs,	3	14
Spiders,		1
Spools,	18	22
Spoons,	1	15
Stamps,	365	240
Star-fish,		2
Sticks,	1	
Stingaree stings,	1	
Stones,	42	36
Stories,	2	5
Strings,	6	23
Tags (shipping),	1	
" (tin),	2	
" (tobacco),	32	10
Teeth (cats'),	1	
Thread,		1
Tickets,	2	1
Tiles,	1	
Time-tables,	1	
Tin,	1	
Tintypes,		2
Toads,	1	
Tobacco sacks,	1	
Tools,	4	
Tops,	38	3
Toys,	4	1
Trade marks (soap, etc.),	2	2
Trees,	3	
Turtles,	10	1
Valentines,	1	3
Vases,		3
Vegetables,	3	
Wagon wheels,	1	1
Walnuts,	1	
Wampum,	3	
War relics,	1	
" (pieces about),	1	
Water (colored),		1
" -colors,		2
Weapons,	1	1
Woods,	15	3
" (petrified),	3	2
Wrappers, (fruit, yeast, etc.),	1	3
Zoölogical specimens,	1	1

Prominent Collections.

Certain collections stand out much more prominently than others, especially cigar-tags, stamps, birds' eggs, marbles, and shells. These are prominer among both boys and girls, though all but shells much more so among the boys. Certain collections rank high, but more particularly among the girls, as picture-cards, pictures, buttons, pieces of cloth, silk, etc., dolls, paper-dolls. Then follow some, as books, rocks, leaves, flowers, ribbons and others, which have a fair following. The remaining classes of collections were made by only a few children, and

ninety-seven kinds were made by only one child each. Table V gives a list of the more prominent collections with the percentage of boys and girls who were making or who had made them.

TABLE V.

Prominent Collections and Proportion of Children Making Them.

	BOYS. PER CT.	GIRLS. PER CT.		BOYS. PER CT.	GIRLS. PER CT
Cigar-tags,	64	24	Sea-mosses,	3	10
Stamps,	60	39	Flowers,	2	10
Birds' eggs,	47	13	Ribbons,	1	10
Marbles,	36	22	Stones,	7	6
Shells,	18	36	Pebbles,	2	7
Picture-cards	9	33	White horses counted,	1	7
Pictures,	9	22	Picture-buttons,	6	5
Buttons,	14	23	Coins,	6	4
Pieces of cloth, etc.,	1	20	Pieces of glass,	3	6
Paper-dolls,	1	17	Butterflies,	5	3
Dolls,		16	Election-cards,	6	1
Books,	7	12	Beads,	1	6
Rocks,	11	9	Spools,	3	4
Leaves,	7	11	Badges,	4	2
			Strings,	1	4

It will be seen that the boys concentrate more on a few things which run as crazes through very many of them. About three-fifths of the boys had collected cigar-tags and stamps, and nearly half of them had collected birds' eggs. Nothing attains such wide-spread interest among the girls, although between thirty and forty per cent. of them had collected stamps, shells and picture-cards, but a greater number of things have considerable runs with the girls. The table shows that only seven things were collected by ten or more per cent. of the boys,—cigar-tags, stamps, eggs, marbles, shells, buttons and rocks, while sixteen things were collected by ten or more per cent. of the girls, the same things as in the case of the boys, except rocks, and also others, all in the following order: stamps, shells, picture-cards, cigar-tags, buttons, pictures, marbles, pieces of cloth, etc., paper-dolls, dolls, eggs, books, leaves, sea-mosses, pressed flowers and ribbons.

COLLECTIONS MADE BY BOYS OR GIRLS EXCLUSIVELY.

Certain kinds of collections, eighty in all, are found only among the boys, and certain kinds, seventy-nine in all, only among the girls, one hundred and thirty-five kinds being common to both. Only boys report such collections as birds' beaks, claws, and wings, crabs, dogs, ducks, goats, lizards, mice, monkeys, rabbit-ears, shark eggs, skeletons, rattlesnake skins, cats' teeth, toads, in the way of animals; brass, bullets, cigar-tins, clocks,

crystals, horseshoe nails, iron, keys, lead, nickles, oil-cans, padlocks, paints, pans, quartz, tin, tiles, in the way of mineral and mechanical miscellanies; blocks, balls, fish-hooks, guns, kites, knives, tools, in the line of toys; war relics, pieces about the war, history-scraps, names of legal holidays, in the historical line; neckties and scarf pins, in the way of toilet articles. Only girls mention autograph sentiments, calling cards, report cards, tally cards, invitations, monographs, tintypes, in the line of things savoring of the souvenir sentiment; belts, perfume bottles, bracelets, breastpins, dresses, ear-rings, fans, jewelry, lace, sachet-bags, stick-pins, in the line of toilet articles; painted china, posters, paper-flowers, jugs, vases, in the decorative line; bald-headed men counted, red-headed girls and hat-tips counted, and four-leaf clover, in the way of luck collections; and doll belongings, in the way of toys.

Individuality Versus Imitation and Fads.

Without doubt the collecting instinct, if such we may call it, is largely dependent on imitation as its tinder. There are large blazes that spread rapidly and widely, and small blazes that still affect their many. The elements of imitation and its specialized form, faddism, are unmistakable. Five-sixths of the six thousand collections reported were, each, one of from ten to three hundred or so similar collections in the same town. About one-sixth, or a thousand collections, were in runs of less than ten in the same town, showing some considerable individual independence. Ninety-seven children, as already mentioned,—fifty-five boys and forty-two girls,—or eight per cent. of all the children, made collections reported by no other child—collections that were the product of individual fancy. If we found the most wide-spread crazes among the boys, as in the case of cigar-tags, so, too, we find, on the other extreme, slightly more marked individuality among them. Some of the collections to which only one child stood sponsor were bits of advice, chips, rubber dogs, envelopes, knots in ropes, match-box tops, names of books read, Chinese nuts, nut-shells, oak-balls, pant-guards, perfect papers, rubbers, stingaree stings, time-tables, bills, advertisement books, merit cards, dragon-flies, gopher skins, jackstones, decayed leaves, Christian names, old shoes, soils, shot, spiders.

Distribution of Interests.

While a study of the collections of specific objects may show, perhaps, the influence of imitation and circumstance and environment, a combination of the heterogeneous varieties of collections under a few general headings may show real trends of

interest and inclinations of mind. For instance, we find that the Santa Barbara children, living in daily contact with the sea-beach, collected more shells and sea-moss than the Santa Rosa children, who, living in an interior, agricultural valley, depend solely on summer vacations for their acquaintance with the ocean and its treasures. This is the result of environment. But we should hardly conclude anything as to general nature interest from these two collections alone. The Santa Rosa children may show their nature interest in channels more in accordance with their own immediate environment; as, for example, we find bird egg collections in excess there. But a combination of all the nature collections in both places will in some measure indicate the comparative place the nature interest occupies among other interests. This combination I have made, and also a separate grouping of the animal, plant, and mineral collections. Under animal collections we have birds, birds' eggs, nests, wings, insects, rabbits, pigeons, and other animals, silk-worms, skins, furs, etc.; under plants collections, ferns, flowers, leaves, woods, moss, seeds, grass, etc.; under mineral collections, minerals, shells, rocks, stones, pebbles, flint, quartz, petrified wood, etc. Besides the nature collections I have combined the other collections under eleven further headings, as shown in Table VI, which gives the proportion of collections found under each. The percentages are made on the whole number of collections. A few of the headings need illustrative explanation. Playthings include dolls, marbles, tops, tools, guns, kites, etc. Under "literary" are placed books, magazines, poems, sayings, stories, etc.; under "historical" there are curios (Alaskan, Chinese, Indian), arrowheads, historical scraps, pieces about the war, etc. "Personal adornment" embraces ribbons, hats, stick and breastpins, lace, fans, feathers, neckties, dresses, etc.; "sentimental:" locks of hair, autograph sentiments, valentines, souvenirs, etc.; "useful:" quilt pieces, handkerchiefs, spoons, cups and saucers, etc. The "miscellaneous trivial" collections are those chiefly of the younger children, of things such as bottles, sticks, strings, boxes, pieces of cloth, etc., which seem to be more or less purposeless, and which are easy to obtain. The second heading is a specific one: "cigar-tags, stamps, etc." No general term seems to cover these collections. Badges, picture-buttons and others are included, and all seem in a way related. These things, like the miscellaneous trivial things, are easy to obtain, but at the same time there is a sort of official importance about them that perhaps appeals; they have the fascination, too, of connection with the outside world; and their quantities and currency quality facilitate the interesting transaction of trading.

TABLE VI.

Distribution of Interests, Shown by the Relative Proportion of Various Groups of Collections.

COLLECTIONS.	OF ALL CHILDREN. PER CT.	OF BOYS. PER CT.	OF GIRLS. PER CT.
Nature,	29	32.4	26
Cigar-tags, stamps, etc.,	24	33.8	16
Miscellaneous trivial,	12	8	15
Playthings,	12	11	12
Pictures,	10	6	13
Literary,	3	2	5
Historical,	2	3	2
Personal adornment,	3	1	5
Sentimental,	1.3	.7	2
Useful,	1.3	.6	2
Luck,	1	.8	1.5
Unclassified,	1.4	1.7	1.5

TABLE VII.

Distribution of Nature Interest.

COLLECTIONS.	BOYS. PER CT.		GIRLS. PER CT.	
Animal.	17.6	32.4%	6	26%
Plant.	4.9		9	
Mineral.	9.9		11	

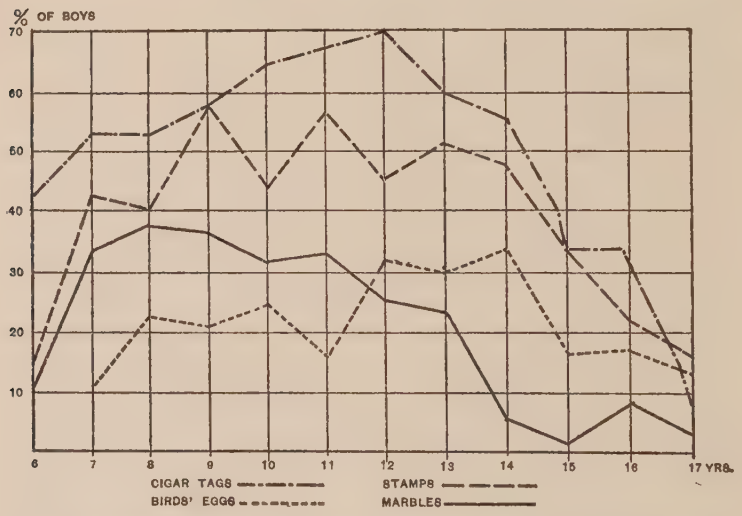
Taking the boys and girls together it is interesting to notice that the nature interest ranks highest. With the boys, by themselves, the cigar-tag, stamp, etc., interest leads the list, but this is practically equalled by the nature interest. In the nature line (see Table VII), interest in the animal world far exceeds that in the plant and mineral worlds, with the boys. Minerals rank next, then plants, while with the girls the order is mineral, plant, animal. The next greatest number of collections with the boys is in the line of playthings; then come miscellaneous trivial things and pictures; literary and historical interests follow with modest steps. With the girls the nature interest ranks higher than that in cigar-tags, stamps, etc. Miscellaneous trivial things come next, then pictures and playthings, followed by the other classes in much less degree. Boys exceed girls greatly in the cigar-tags, stamps, etc., collections, considerably in the nature collections, and very slightly in the historical collections, while girls exceed boys in the other classes except in playthings, where both have an equal interest. In the subdivisions of nature collections, boys exceed girls only in the animal collections.

Age Distribution of Interests.

Some of the collections are found at all ages, beginning in childhood and lasting on into adolescence. Others show an especial prominence at certain ages. We may notice the age distribution of a few of the more prominent collections. Chart II shows the progress of interest among the boys in their four prominent collections, cigar-tags, stamps, marbles, and birds' eggs. The percentages show the proportion of boys collecting at each age.

Chart II.

Percentage of Boys Collecting Cigar-tags, Stamps, Marbles, and Birds' Eggs, at Different Ages.



The marble collection begins at least by six years, with a small number of followers, and reaches its height from seven to ten years, but especially at eight and nine years. After this age it declines, and from thirteen years on plays a small part. Stamps hold their own from seven to fifteen years, declining thereafter. The prominent ages are from nine to fourteen years. Cigar-tags are rather full-fledged at as early an age as six years. The craze increases, reaching its greatest intensity at twelve years, and then diminishes, dying out practically at sixteen years. This collection is prominent through a greater number of years than any other collection. The bird egg fever begins mildly at seven years and increases, reaching its height from twelve to fourteen years.

The greatest intensities of these four collections seem to fol-

low each other like the crests of succeeding waves. The marble crest, at eight and nine years, is followed by the stamp crest from nine to eleven years, then comes the cigar crest at eleven and twelve years, and then the birds' egg crest from twelve to fourteen years. The cigar-tag craze remains highest through all ages, the stamp craze next highest through all ages. The marble line of interest and that of birds' eggs cross between eleven and twelve years and supplement each other.

With the girls the interests in stamps, cigar-tags and birds' eggs follow about the same lines as with the boys, reaching their heights a little earlier if anything, while the greatest interest in marbles comes a year or so later.

Noticing now other nature collections besides birds' eggs, we find that rocks are about the first to appear upon the scene. The little child of four seizes upon crude, irregular bits, lumps and masses. Beauty, form, and color seem to play little part at first. The collecting of rocks continues until about ten years, and in the latter part of this period is largely superseded by the collecting of smoother stones, often "colored stones" and "pretty stones." In contrast with crude rock-lumps, the collection of pebbles begins also at three or four years, and lasts about the same length of time. Leaves have their dominant period before ten years, while flowers, sea-mosses and shells, come especially between eight and eleven years, chiefly with the girls, and butterflies at this age with the boys. Spontaneous nature interest, as far as collecting goes, seems to be especially from eight to eleven years. Birds' eggs are about the only nature collection that continues to show any prominence in adolescence.

The collection of miscellaneous trivial things,—buttons, spools, strings, glass, beads, pins, broken dishes, etc.,—begins at about three or four years of age, and lasts to about seven or eight years. The collection of picture-buttons is an adolescent affair, together with badges. Doll collections, beginning at three or four years, reach their height at nine or ten years, while paper-dolls are strongest a year or so later. The collection of pieces of cloth follows the trail of the doll interest, and is superseded in early adolescence by that of ribbons. Picture-cards rage from four to eleven years of age. Pictures have two periods: the childhood period of scrap-book pictures up to nine or ten years, and the adolescent period of better pictures from twelve years on. The interest in books begins at about eight years, and continues through adolescence. The "luck" interest is from eight to twelve years. The "historical" interest comes from eight to thirteen years, continuing into adolescence.

Stages of Development in the Child.

Looking now at the age progress from the standpoint of the

child rather than of the various collections, we may combine the prominent interests of each age and note certain well-marked stages of development in the collecting mania. Up to eight years of age the collecting impulse is crude, groping, undirected. Collecting at this period seems to be an instinct rather than an interest. Things are collected which are absurd, valueless, trivial, mechanical, scrappy, simple and easy to lay hands upon. There are bottles, boxes, pins, clothes-pins, strings, sticks, matches, buttons. The crudest nature collections come at this age,—acorns, rocks, pebbles. Things which are purposeful at this age are really possessions rather than collections, as toys, dolls, doll-belongings, scrap-books, etc.

Following the childhood period is what we may call the pre-adolescent period, from eight to eleven or twelve years. Here collections reach their height in quantity and genuineness. The crude instinct seems to develop into a more conscious interest. There is more interest in the things themselves, as well as in the collecting of them. The interest is more directed, more purposeful, answers the call of inner needs more strongly. On the other hand we find the imitative element very strong at this period. On the side of "inner need" we notice that the play interest reaches its height here, as shown in the marble, doll, etc., collections, and also the nature interest is more prominent at this age than at any other, shown in the collections of flowers, stones, mosses, butterflies, shells, eggs, etc. On the side of "imitation" we find the cigar-tag and stamp crazes more widespread at this age than earlier or later. At this age, too, the "possession" idea of childhood seems to develop into love of quantities. The largest collections come now.

Then follows the adolescent period from twelve years, or so, on, a period not so much of interest in the things collected, not so much of large crazes and wide-spread imitation and love of quantities, as a period of social associations, a period of fad and fashion on smaller scales. The pre-adolescent child is a spontaneous naturalist,—he gathers in his quantities. The adolescent, entering into his heritage of logic and reason and understanding of relationships and of cause and effect, passes out of the "naturalist" stage; but at the same time he does not seem to develop spontaneously into the later scientific stage of digestion and classification and explanation in connection with his collections. Scientific development at this age, when the individual is less the product of the race and more susceptible to the influence, especially of human environment, needs direction and encouragement, if it would continue in its normal path. We should naturally expect collecting, which before adolescence has been more or less of an end in itself, now, if carried on, to be used as a means, as a handle, to higher scientific interests.

But such does not prove the case. For want of direction the collecting impulse in reality continues into adolescence as a vestige, as it were, a remnant, of the real instinct. It dribbles off into sentimental lines, as in the collection of party-souvenirs, theater programmes, etc.; and into social fads, as in the collection of spoons, hat-pins, etc. The spontaneous nature interest largely dies out, except in the case of birds' eggs, where other instincts, as the roaming and hunting, continue to supply incentive. The stamp and cigar-tag interests, which continue, are now closely associated with the passion for trading.

But while, in general, collecting in adolescence lingers as a degenerate form, as it were, or as a cat's paw for other passions as the sentimental and social, the hunting and the trading, still we find that it does continue as a real and genuine interest in two lines, in the literary and the æsthetic. The collecting interest is a beginning interest in any subject. Logical and analytical interest comes later. Now the nature interest develops earlier than the literary and æsthetic, in the child as in the race, and hence it is natural that the collecting period in the former line should normally precede that in the latter lines. The literary and æsthetic interests, beginning largely in adolescence, are initiated by a collecting stage. So, here, collections of books, pictures, etc., come normally, and true appreciation of them follows later. As a pedagogical conclusion we may here suggest that while nature collecting should be followed in adolescence by more analytical work, literary and æsthetic work, on the contrary, may begin in early adolescence with the encouragement of this very collecting instinct.

Methods of Obtaining Collections.

The children were asked to tell how they obtained their various collections. The data given here are from the Santa Rosa children only. The methods of getting collections simmer down to a few. The things were found or hunted for by the children themselves, that is, obtained by their own exertions, were given to them, were traded for, were bought or won. Table VIII and Chart III show the relative proportion of the methods given.

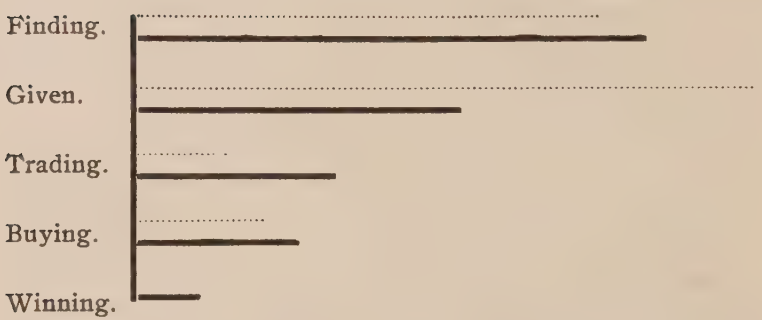
Table VIII.

Methods of Obtaining Collections.

	Boys' methods.	Girls' methods.
	per ct.	per ct.
Finding,	39	36
Given,	26	48
Trading,	16	6
Buying,	13	9
Winning,	4	

CHART III.

Methods of Obtaining Collections.



With the boys the chief method of getting their collections is by their own exertions, finding them or hunting for them. Then follow "given," "trading for" and "buying." "Winning" is insignificant and applies practically only to marbles. Nearly half of the methods mentioned by the girls came under the head of "given." Then follow "finding," "buying" and "trading," the latter two being comparatively unimportant. The boys exceed the girls somewhat in finding and hunting, and considerably in trading and buying. The girls exceed the boys very greatly as passive recipients of outside assistance, in having their things given to them by brothers, sisters, parents, uncles, aunts and friends. But this excess of passivity on their part is not balanced by any special decrease in the method of finding, but it rather balances the excess of trading, buying, and winning among the boys.

These different methods vary somewhat with the different ages of the children. Charts IV and V show the trends of the various methods, one for boys and the other for girls.

Looking at the chart for boys we find that the prominent ages for being given their objects are seven, eight and nine years, after which there is a general decrease in this method. The prominent age for finding and hunting immediately follows the more passive period and comes at nine and ten years. The lines for "given" and "finding" cross just before nine years, the latter waxing greater at that time and continuing so throughout. From eleven years on the "finding" line continues rather evenly but is less than before on account of the rise of the buying and trading tendencies. The prominent ages for buying and trading follow next after those for finding, and are

CHART IV.

Methods of Obtaining Collections, according to age. Boys.

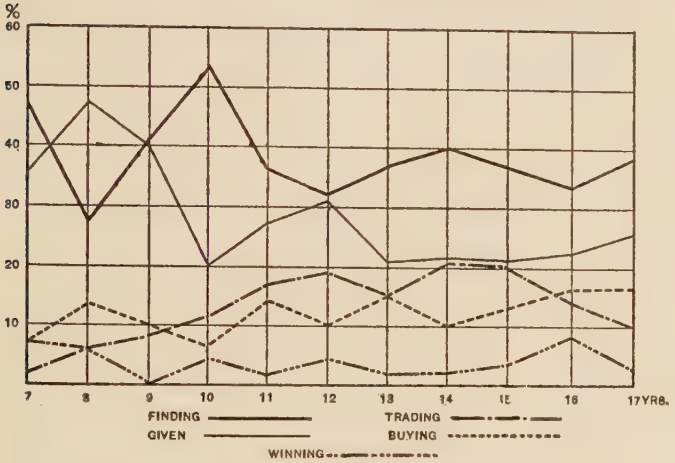
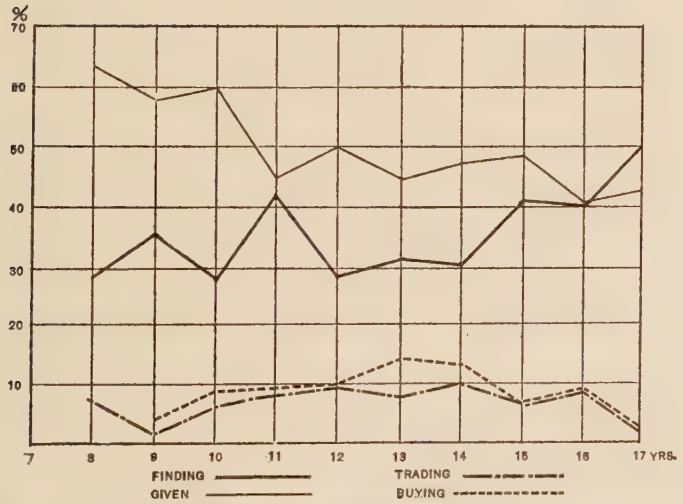


CHART. V.

Same as IV. Girls.



from eleven on through adolescence. The winning tendency maintains a humble but even course.

A succession of crests may be noticed,—the crest for "given" at seven, eight and nine years, that for "finding" at nine and ten years, those for "buying" and "trading" from eleven

years on. With the girls the crest for "given" comes at eight years and those for "trading" and "buying" come in adolescence, as with the boys. The line for "finding" has a crest at eleven years, corresponding to that of the boys at ten years, but there is also another crest in adolescence.

The greatest activity among the children in obtaining their collections by their own exertions comes in the pre-adolescent period, which has already been noticed as the age of greatest intensity and genuineness of interest in collections, and also as the age of greatest interest in nature collections. With adolescence, the commercial spirit comes in to mar the naturalist spirit.

I give some of the responses of the children to the question, "How did you obtain your collections?" The first one is very typical of the younger children.

Girl, 9 years. My cousin gave me my paper dolls. My aunt gave me my box of shells. My papa and mamma gave me my picture-cards and scrap-books. And my grandma sent me my rocks. And whenever I find a pretty rock I take it home.

Boy, 10 years. You do not collect ponies. You ask your father to buy you one.

Boy, 10 years. I get some of my cigar wrappers from the cigar store and my father gives me some and my uncle too, and sometimes I ask men for them.

Boy, 10 years. In collecting cigar rings it is very hard to find many good ones, because most every boy is collecting them, but in San Francisco you can find a great many, but still the boys collect them.

Boy, 10 years. I got my marbles in playing for them and bought a few.

Boy, 10 years. I started to count white horses when I was eight years old and ended when I was nine. It brought me good luck. I got to go to a show.

Boy, 10 years. When you collect cards you can see them lying around on the streets.

Girl, 13 years. There is not much to tell about my card collecting. I simply asked my friends to get me all they could, and then if I should happen to get two of a kind I would trade with some one.

Girl, 12 years. I obtained my stamps in several different ways, hunting for them myself, buying them, getting friends to collect for me and trading with other people. I have about 600 varieties and 1,000 stamps.

Girl, 13 years. Buttons are very foolish and easy things to collect, but I had the craze as most girls do. I had my grown friends give me all the odd ones they had in their button baskets.

Boy, 14 years. During the time I have been collecting my stamps, I collected them myself. The way I got them, I traded the stamps I had twice alike, and I bought a good many. Sometimes I go in stores and buy some, and other times I send back east for them, and then I sell them off from sheets at 50% commission and take my commission out in stamps.

The replies in regard to the nature collections are the fullest and most enthusiastic, especially in the case of birds' eggs, and often give additional information about the objects collected.

Girl, 11 years. I hunted for sea mosses along the seashore, and then I wet it and put it in the sun to dry. The sea moss grows on rocks out in the ocean. When there is a storm it breaks the sea moss off the rocks, and it floats into the shore.

Girl, 11 years. I hunted for shells on the seashore. There are many different kinds of shells, and some are very pretty. There are two kinds called rice shells and coffee beans. You find these in little alcoves where the water is always washing up on the sand.

Girl, 13 years. Pebbles and shells I hunted for on beaches and the shores of Lake Tahoe, where you can find some beauties, some pure carnelians and many bright stones for polishing.

Girl, 13 years. Minerals are rather hard to collect, so I consider my collection worth a good deal, and yet I came near giving it to our school museum. I am glad now that I can still claim them. I found some of my specimens, others were given to me.

Boy, 13 years. I got most of the rocks along the railroad track, but some along the bed of the creek. I went up Mark West Creek by the railroad hunting for rocks.

Boy, 6th grade. Butterflies are quite hard to get. Sometimes when standing in the yard I would see a butterfly, then I would take my hat off and throw it at the butterfly, and that would scare it. Then I would chase it around the house a few times, then the butterfly would start off in a different direction and probably go over a swamp, and then I would wade through and get my feet wet rather than let the butterfly go. Sometimes I would run after them three or four hours.

Boy, 12 years. I got my birds' eggs by finding them. It depends upon what kind of birds' eggs you are hunting for. Some birds build on the ground, some build in trees, and some on barns and some in barns.

Boy, 10 years. I climbed trees for my birds' eggs, and looked for larks' eggs in the field. When any one is going to hunt birds' eggs he must go into the long dry grass, and there he will find larks' or quails' eggs. You should go about July or August.

Boy, 13 years. I used to live on a ranch in Colusa County. I had about 15 quail eggs. These the men who worked for my father would bring in in haying season. The quail would build their nests in the shocks where the men would find them. I had some dove eggs; these I would find after the hay was cut on the ground. I had some small owls' eggs and linnets'. The swallows made their nests in the cotton-wood trees that grew around the house.

Boy, 14 years. Birds' eggs are found in the month of May. The best place to find birds' eggs is in the trees on the hills. I found all my birds' eggs myself. I had to climb way out on small limbs to get the nests.

Girl, 16 years old. I obtained my collection by hunting for the eggs and having my friends collect for me. It is very interesting to study the habits of birds, they have so many ways to build their nests. The magpies' eggs are rather hard to obtain as they build on the top of tall willows. The nest is composed of strong twigs. In shape it is round with a small opening in the top. Birds and animals have always had a great attraction for me.

Only two or three children suggest qualms of conscience in collecting birds' eggs.

Boy, 13 years. I think I like to collect birds' eggs better than anything else. But I think it is not right to take our songsters' eggs.

Girl, 13 years. I started to collect birds' eggs, but when I saw how badly the birds wanted them, I would just climb down that tree and

up the next, where the same performance was apt to occur, and so I failed.

Motives for Collecting.

The children give a variety of reasons as to why they made their collections, as shown in Table IX. They collected because others were collecting, because an older brother or sister, or Johnny Jones, or the "other boys," were collecting, that is, as a matter of imitation or fad.

1. Boy, 9 years. I began to collect cigar-tags because I saw the other boys collecting.

Girl. I collected stamps because every one else was.

Girl. I commenced getting pieces of calico because I heard of a little girl collecting for herself.

Boy, 12 years. Cigar wrappers, picture-buttons, stamps, government tags, election-cards, I got just because others did.

Boy, 11 years. As all the other boys were collecting stamps I thought that I would get a collection of them, just for the fun of collecting.

Boy, 10 years. I got birds' eggs because my relatives got them.

Girl. I began to collect shells because my sister was.

Girl. I collected cigar wrappers because my brother was and he wanted me to.

Girl, 13 years. The reason why I collected the dolls was because it was a fashion to play with them and have as many different kinds as possible, and I had to follow the fashion, and because I considered it great fun to play with them.

Girl, 13 years. I suppose my weakness or craze (in regard to buttons) was because I am a girl and all girls are afflicted with it sometime during their life.

Girl, 14 years. I made my collections because I wished to and because they were fads.

The influence of others is sometimes in the way of rivalry, rather than mere imitation.

Girl. Another girl and I collected glass to see who would get the most.

Boy, 9 years. I started to collect cigar wrappers because my chum started and I wanted to beat him.

Boy, 12 years. I began collecting cigar wrappers because I saw another boy collecting and so I thought I would see if I could get as many as he had.

Girl, 13 years. Cigar rings, I am ashamed to say, I commenced collecting because a girl I knew and did not like had 500 or more different kinds and I wished to get ahead of her, and I did.

Boy, 14 years. How I started to collect eggs, another boy said that he was going to collect and he would get a larger collection than I, so I began to collect them.

The interest in quantity, in numbers, is very great. To get as many as possible possesses a great attraction. Interest in quantity far outweighs interest in kind.

Girl. I collected picture-cards to see how many I could get.

Boy, 11 years. I thought I would collect election cards to see how many I could get.

Girl. I wanted to see how many cigar wrappers I could get in three weeks.

Boy, 14 years. I collected tags for the pleasure of looking at my vast numbers.

There is some interest, however, manifested in kinds, in varieties, as well as in mere numbers.

Boy, 11 years. I thought I would collect buttons and birds' eggs to see how many different kinds I could get.

Girl, 16 years. I commenced my collection with the purpose of seeing how many different kinds I could obtain and because I am interested in them.

Many vague reasons are given by the children, showing a more or less purposeless and nebulous state of mind. They "just wanted to," they collected "just for fun," they had a "good start" or an accidental start, they thought it was "nice," some one suggested the idea, the things were "easy to get," or they accumulated in some way or other. Some of the children give no reason, others say they "don't know why." All these replies I have classed in the table, under the head of "Indefinite."

Boy, 6 years. I collected just to have a collection.

Boy, 9 years. I just collected shells for fun. I just collected stones for fun.

Boy, 10 years. I found two nests with eggs and I thought if I was started I might as well collect, so I did.

Boy, 10 years. A boy said to me why did n't I get some pigeons. So I asked my father and he said yes, and I made a house and collected pigeons.

Boy. One day I climed a palm tree and I got at least twelve eggs. This made me think of collecting, so in about a month I had about 50 eggs. I did not collect for any good reason but just for the sake of saying I collected something.

Boy, 12 years. I commenced collecting election cards because I had read about it in one of the San Francisco papers.

Girl, 13 years. I do not know why I commenced collecting dolls, probably because I am a girl.

Boy, 15 years. I got into the notion.

Some collect with the idea of enjoying their collections in some way, of using them, of playing with them, or for the pleasure of looking at them.

Boy, 8 years. Marbles I began to collect because it would be fun playing with them.

Girl. Election cards. I liked to look at them.

Boy, 12 years. History scraps, puzzles, games, I got to play with on rainy days.

Boy, 12 years. Pictures of ships and famous men I got just to keep and look at.

Girl. I collected story books so I could read them when I was older.

Girl. I collected ribbons because I wanted enough to make a chair tidy.

Girl, 13 years. I commenced collecting picture-cards for the purpose of making an album.

Besides the enjoyment of the objects collected there is pleasure in the mere collecting, in the activity as a pastime.

Girl. I collected flint just for the fun of getting it.
Girl. I commenced collecting flags because I thought it would be nice to take up my idle time.
Girl. I collected dolls just for the pleasure of it.
Boy, 12 years. I got birds' eggs just to pass away the time.
Girl, 13 years. I started collecting pebbles and shells because I had nothing else to do at the time.

Differing from the use or enjoyment of the collections, is the more intellectual interest in them and desire to study them. The curiosity interest may be included under this head.

Girl. I collected birds' eggs to have them as a curiosity.
Girl. I think curiosities are nice to study about and I like to have them.
Girl. I collected plants because I liked them.
Boy, 11 years. I collected my minerals because I liked to take an interest in them.
Girl. I liked to collect pollywogs because I tried to find out all about them and see them turn into frogs.
Girl. I like books very much, and I am interested in them.

The interest in the objects collected is sometimes an æsthetic interest. The beauty of the object attracts.

Boy, 10 years. I got pebbles because they were pretty.
Boy, 10 years. I got picture cards in stores because they were pretty.
Girl. I collected shells because they are nice and pretty.

The commercial motive appear consciously to some extent.

Boy, 10 years. I collected eggs because I can sell them. In collecting rings I most always sell them. I collect stamps because when you get a set of them you can sell them for a great deal of money. You can sell flint if you chip an arrowhead out of it.
Boy. I collect stamps because the stamps that I have collected for years are worth very much money. I keep on collecting them now because I was offered for my collection twenty dollars, but they are worth more.

Objects are also collected as souvenirs, and a few other miscellaneous reasons are given, such as, for luck, for trading purposes, to give to others, to exhibit, to have or keep, for school work.

Table IX and Chart VI show the relative proportion of these various motives, and differences for boys and girls.

TABLE IX.

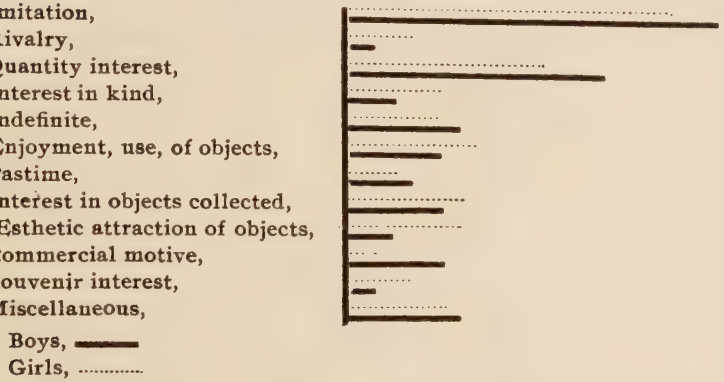
Motives for Collecting.

	Boys' Motives. PER CT.	Girls' Motives. PER CT.
Imitation. Because others did.	29	25
Rivalry. To get as many or more than others.	2	4
Quantity interest. To see how many.	20	15
Interest in kind. To see how many kinds.	3	6
Indefinite.	8	6
Enjoyment, use, of objects.	7	10
Pastime. Pleasure in collecting.	4	3

	Boys' Motives. PER CT.	Girls' Motives. PER CT.
Interest in objects collected.	7	9
Æsthetic attraction of objects.	3	8
Commercial motive.	7	2
Souvenir interest.	2	5
Miscellaneous.	8	7

CHART VI.

Motives for Collecting.



Imitation looms up as the strongest influence in setting the collecting instinct in action. Then follows the interest in quantity, in numbers, in large possession. In contrast with imitation, or doing as others do, rivalry, or doing more than others do, seems to hold a comparatively small place, and in contrast with interest in quantity, interest in variety, in kind, is insignificant. The interest in kind and the genuine interest in the objects themselves approach most nearly to the conscious scientific attitude. The considerable percentage of indefinite reasons given seems to suggest the instinctive side of the collecting interest. Some start, some suggestion, some idea perhaps not remembered or known, supplies the incentive to an instinct that seemingly requires very little inducement to call it forth.

Some sex differences may be noticed. Boys yield slightly more to the imitative influence than girls. This has been already shown, in the record of their collections, by the fact that they exhibit more wide-spread crazes. As imitation takes on the character of faddism in adolescence, the girls give this motive oftener than the boys. Boys, too, exceed slightly in the love of quantity and large possessions. This is shown also by the fact that their collections are carried to a far greater extent than those of the girls. They often collect thousands of objects, while girls are content with hundreds. Girls show somewhat more maturity in their greater interest in kinds and in the objects collected.

Without doubt the interest in kind is larger for both boys and girls than is here represented. It is less of a conscious interest, and at the same time it is an interest in quantities of kinds, which is not very different from interest in quantities of objects. In the commercial motive boys out-run the girls, while the girls balance their lack in this line by a disinterested pleasure in the æsthetic and sentimental attractions of their collections.

Certain motives are more dominant at some ages than at others. Imitation is given as a motive by boys chiefly before adolescence, and by girls chiefly during adolescence where it takes on the character of faddism. Interest in quantity comes chiefly from ten to twelve years, before adolescence. Rivalry is scattered along, but does not appear before nine years, and is, perhaps, a trifle the strongest just before adolescence. The motive of enjoyment and use appears largely in the ten to twelve period. The scientific, the æsthetic and the commercial interests come principally in adolescence. The indefinite motives appear to a great extent before eight years.

Summarizing, we find childhood the period of blind yielding to instinct; the pre-adolescence years, from nine or ten to twelve, the age when imitation, competition, interest in quantity and enjoyment of the objects collected act as motives. In adolescence come faddism, and also the commercial, æsthetic, sentimental and scientific interests.

Arrangement of Collections.

A study of the arrangement or classification children make of the contents of their collections shows that they are in the stage of the naturalist rather than of the scientist. There is comparatively little classification of objects according to any scientific basis, that is, according to variety and kind. The large majority of the collections are simply "kept together," with more or less care. They may be in "no order," just "mixed together," "arranged any way," kept "in a pile," or, as may be stated more definitely, they may be kept in the barn or the shed, in a drawer, a box, bag, envelope, book, trunk, pocket, basket, bottle or can, on a shelf, or fastened on cloth, paper, ribbons, or on a string.

Boy, 8 years. I put my stamps and eggs in a box. I keep my arrow and spear heads in boxes. I keep my photographs in a drawer.

Boy, 9 years. I put my shells in a bag altogether. I put my stones in a box. I arrange them anyway.

Boy. I kept my butterflies pinned to the bottom of a box. I kept my birds' eggs all in the same box.

Boy, 11 years. I put my books in the closet. I put my pebbles altogether down stairs. I tied my cigarette cards in a bunch and put them in a box.

There are many evidences of care if not of arrangement.

Girl. I put my shells all in one box and I put the tender shells on the top so that they would not break.

Boy, 10 years. I had my birds' eggs in a cigar box. It is filled with sawdust. Sawdust is very soft and will not break the eggs. The eggs are very tender. I think that the humming birds' eggs are tenderest.

The first appearance of classification is on the basis of size or color or both. Butterflies may be arranged according to color, eggs according to size or color.

Boy, 9 years. I put the birds' eggs in a glass box, large eggs in the bottom and small ones on top.

Boy, 9 years. The cards I put in my scrap book, small ones on one page and large ones on another.

There is some classification of objects according to kinds, but this does not imply much knowledge of varieties.

Boy, 10 years. I arranged a box in ten parts and divided the eggs by the kind.

Boy, 11 years. I arranged my minerals in cigar boxes, and I made a lot of little paste board boxes, and put the minerals in the little boxes and put them in cigar boxes. The minerals are about all the same size and are numbered and named.

Boy, 11 years. I put leaves in a box and separate them by different kinds.

Boy, 12 years. I arrange my birds' eggs in numbers. I have a book and I put No. 1 on a bird egg. I put a 1 on the book and the name of the egg.

Boy, 13 years. When I got birds' eggs I went to work and got a paste board box about three inches deep, one foot wide, two feet long, to put them in. Then I got some long strips of paste board and fenced off one kind of eggs from another kind, then I put in these places cotton so the eggs won't break.

Girl. I arranged my cigar ribbons in a cigar box. I have every kind in a little pile by itself.

Girl. I have a cabinet for my curiosities, I arranged them by putting the same things alike.

Then there are miscellaneous methods of arrangement, for example, according to age, as magazines or theater programmes, according to beauty, difficulty of getting, value, rarity, shape, alphabetical arrangement, or some arbitrary arrangement, as in rows.

Girl. Pebbles and shells are arranged in bottles and trays in my cabinet in the best manner possible to show them off.

Boy, 11 years. I put them in books and put them fancy.

Girl, 13 years. My minerals I arrange in a cabinet in whatever way they look the best.

Boy. I took a book and numbered the pages like A, B, C, D, E, F, G, and then if I took a cigar wrapper that the name of it began with A, B, or M, or P, I would paste it on the right page.

Girl. I arrange my cigar wrappers in rows just as I get them.

Boy, 9 years. I put my cigar wrappers in an old composition book, and instead of putting them in rows, I would make a star.

Boy, 12 years. History scraps I put in books according to the way they fit in.

In some cases the objects of the collections are used for decorative purposes, perhaps hung on the wall or from the ceiling, as pictures, picture-cards, badges, feathers, nests, antlers, strings of eggs, buttons, etc.

Table X and Chart VII show the relative proportion of the various methods of arrangement.

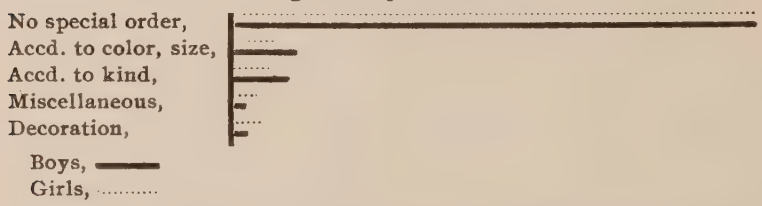
TABLE X.

Arrangement of Collections.

	BOYS' METHOD. PER CENT.	GIRLS' METHOD. PER CENT.
Things kept together. No special order,	80	80
Classification according to color, size, or both (size predominating),	9	6
Classification according to kind,	8	5
Miscellaneous arrangements,	1	4
Decoration,	2	5

CHART VII.

Arrangement of Collections.



There is very little spontaneous classification. This is natural as quantity is evidently more interesting than kind. Throughout all the ages the care of collections, the simply keeping them together, far outweighs any classification or arrangement of them. This is the only method up to nine years, when there is a small proportion of miscellaneous arrangements and of classifications according to color and size, with some few instances of classification according to kind. But these arrangements and classifications appear chiefly after eleven years of age. Decoration comes in chiefly from 14 years on. Boys shows more sense of classification than girls, and girls exceed in decorative and miscellaneous arrangements. Boys and girls show the same large proportion of "no order."

To summarize the facts which this study seems to indicate, we find:

1. The collecting impulse is practically universal among children.

2. It is an impulse of great strength, leading the child generally to make collections along several lines. It has its rise in early childhood, develops rapidly after six years, and is strongest from eight to eleven years, just before adolescence,

the greatest number of collections per child occurring at this time, after which it declines in intensity.

3. A remarkable variety is shown in the kinds of things children collect. What they collect seems to be largely the result of circumstance, environment, suggestion, or imitation, but *to collect something* seems to be the part of instinct.

4. Certain collections are very prominent and have a widespread following, showing the part imitation plays as incentive to the collecting instinct. The imitative influence is strongest in the pre-adolescent years, while in adolescence a specialized form of imitation appears in the way of faddism.

5. Certain inherent interests, however, are shown by groupings of the various collections. Of these the nature interest appears to be strongest. The next greatest number of collections is in the line of stamps, cigar-tags, etc., then come the trivial childish collections of sticks, glass, buttons, etc., and the collections ministering to the play interest, and then those pertaining to the æsthetic interest. Collections along literary, historical, sentimental, commercial, useful and "luck" lines are comparatively few.

6. The collecting impulse shows a certain trend of development in its character. In childhood there appears the crude instinct to collect anything, however trivial, anything simple and easy to obtain. In the pre-adolescent years the collecting interest reaches its height in genuineness. Interest in the things collected is here strongest. At this age nature and play collections are more prominent than at any other age. There is also greater susceptibility to the imitative influence at this age. In adolescence the instinct declines, and degenerates into a matter largely of fad and fashion, along sentimental and social lines.

7. In obtaining their collections, the young children are given their things largely; the children in the pre-adolescent period are most active in obtaining their specimens by their own exertions; in adolescence the commercial spirit, as shown in buying and trading, appears as an additional factor.

8. As to motives for collecting, the influence of others, shown in imitation and rivalry, appears strongest. Then comes the interest in quantity, in large numbers and great possession. The interest in kind and in the things themselves as specimens is small. Other motives also appear, such as the enjoyment and use of the objects collected, the pleasure in collecting as a pastime, the æsthetic and commercial attractions of the objects. A considerable proportion of vague reasons for collecting is given by the children.

9. In arrangement of their collections children show very little sense of classification. The large majority of children keep their objects in no order, simply keep them together. There are

some attempts at arrangement, as, for example, according to beauty, value, shape, and in arbitrary forms. The first classifications, appearing after nine or ten years of age, are on the sense basis of color or size, classification according to kind, what there is of it, coming a little later.

We have made no attempt to go into the psychology of the collecting instinct. In the mere calling of collecting an instinct, however, we have assumed considerable psychology, perhaps more than is warrantable. But certainly this phenomenon is no accidental affair, no merely acquired trait. When we consider its universality, its wide-spread affection, when we consider its intensity, the number of collections children make and the interest children take in them, when we consider the variety of the things collected, showing that the mania seizes upon any and practically every outlet imaginable, and showing, too, that to collect is more important than what is collected, when we consider, moreover, that the phenomenon has a definite progress,—a rise, a growth and a decline, an age-development,—we are inclined not to hesitate in calling it an instinct.

But, at any rate, whatever the psychological interpretation, the fact remains that the collecting instinct, passion or interest is wonderfully universal and wonderfully intense among children, and that consequently it may be used to practical pedagogical advantage.

Again the question may be raised, admitting that collecting is a genuine interest, is it an interest in the scientific sense? The scientific collection is made not for the purpose of obtaining quantity but for obtaining varieties in completeness, and for the purpose of classifying those varieties. But children care more for quantity than kind, they desire to possess things rather than to illustrate principles, and they show very little sense of classification. However, in scientific development, there seems to be room for a purely naturalist stage, preceding the analytical stage, a stage of going out and gathering in before sitting down to staid induction, a stage, too, of mere gathering before the stage of searching along the line of any hypothesis. Children seem to be in this more primitive naturalist stage, and as in such we must deal with them.

The age at which the collecting interest is of greatest pedagogical importance is largely in the pre-adolescent period, before which collecting is more or less a blind, groping, purposeless instinct, and after which it largely loses its purity by being bound up with other associations, but during which period it reaches its greatest intensity and genuineness. Here we find the greatest revelling in quantity, here the time when the instinct acts most easily through the incentive of wide imitation, here rivalry comes in to add zest, here the true naturalist spirit of finding

and hunting, as opposed to receiving or buying, is most prominent, here the beginnings of a sense of classification develop. In fact, at this period the instinct seems to be at its height. Its tractability, too, through the incentive of imitation makes it most practical now for use in education. So much for the period when the collecting instinct is most important as an educative channel. What content interest of most value appears at this pre-adolescent time? Here we find the nature interest at its crest, and this is the time for sending children forth to gather in nature's stores, to let them roam and wander, to encourage their naturalist clubs where they may proudly exhibit their collections, where they may compare their treasures with those of the other children, where they may be stimulated to relate how and where they found their specimens and to tell all they know about them, not in any methodical way but in their own way where what they have imbibed naturally, or with unsuspected stimulus, may overflow in the telling.

As we have suggested before, the naturalist interest is a beginning interest, and the collection passion may be used normally as a beginning help in literary, historical and artistic studies in adolescence, in the same way that it may be used in nature lines in the pre-adolescent period.

FOUNDATIONS OF NATURE STUDY.

III.

By C. F. Hodge, Clark University.

"*Fit non Nascitur.*" This conclusion of Professor Huxley's may be taken to express the central thought of the present chapter. The entire quotation is as follows.

"Again I am incessantly told that we, who advocate the introduction of science in schools, make no allowance for the stupidity of the average boy or girl; but in my belief, that stupidity, in nine cases out of ten, '*fit non nascitur*,' and is developed by a long process of parental and pedagogic repression of the natural intellectual appetites, accompanied by a persistent attempt to create artificial ones for food which is not only tasteless, but essentially indigestible." (Science and Education Essays, p. 128.)

"Nine cases out of ten" may be rhetorical rather than arithmetical. It may be less than nine in ten or more than ninety-nine in one hundred, made stupid by failure to receive a natural education, in other words, an education adapted to their normal development.

In the first paper we considered the fundamental relations which the race has established with nature. These we found to be subjection and dominionization of animals and cultivation of the soil, steps logically consequent and fundamental to development of stable civilization. The second paper followed with, what has seemed to me, a basal rationale for the mental, moral and religious development of individual character. The essential here we found to be, in line with so many of the best tendencies in recent education, whole-souled activity directed toward ends that are solidly and intrinsically worth while, *i. e.*, active acquirement of right knowledge which may increase a man's ability to do human good. Reference to the child has been necessary to fill out the argument here and there, since he is at once the epitome of the race and father to the man. The topics thus briefly touched upon may now be considered in some detail under the general head of a child's normal relations with the nature about him. The question is, thus, what may a child to best advantage learn and do, and how he may best set about his task. This necessitates a discussion of different plans and methods of nature study now in the field in order to arrive at

an intelligent opinion as to the method that may bring us the best results.

We are all under obligation to Mrs. Alice Freeman Palmer for exhorting us to give the children "large interests and give them young." This is in line with the intellectual and moral foundations treated in the last paper. These large interests must form the basis for healthful growth and furnish continual motive for the best activities of child life. We are also scarcely less in her debt for saying that: Although born much too soon to receive many of the advantages the present has to offer, still she is thankful that she was born soon enough to escape the flood of juvenile books that threaten to deluge our modern child. While, of course, we need all the help that books may be able wisely to give, to learn those things in nature that surround us on every side, and these are the things with which I think nature study should chiefly concern itself, out of books, instead of by first hand observation, is a palpable absurdity. The book method of nature study we would not even mention, were it not so ancient an inheritance from the schools of unnaturalism or antinaturalism of the past and so pressing an evil of the present. Despite all the struggles of so many of our best teachers, this abject bookishness enthralls the minds of our youth like the serpents of the Laocoon group. A high school teacher, when apple trees were blooming all about them, asked her class to write a description of an apple tree. The pupils immediately asked for references to books on the subject. She told them to refer to orchards, but the result proved that a number of the class copied their descriptions from encyclopedias. "*Fit non nascitur*," and the book toils reach down even to the lowest grades. In distributing some peach pits to a first grade the other day, I asked how many in the room already had a peach tree. One little boy's hand went up. I asked him how big his tree was, and he held his hands up about three inches apart to indicate its height. I next asked him where he got it? "My father gave it to me." Does it bear peaches? "Yes, it's covered with them." Are they good to eat? "No." Well, where is this wonderful peach tree, three inches tall, covered with peaches that are not good to eat? "*In a book.*"

There are two great sources of help and inspiration for nature study in books, the one on the side of literature the other on that of science. The deeper human values on the side of heart culture to be found in our nature literature, the wholesome optimism and the sane and sound philosophy of life, are things we cannot value too highly in nature study courses. But we must have the genuine art of the sincere lover of nature. By no amount of effort or dissimulation can mere compilers and book-makers supply or conceal this prime defect. We naturally

turn to such English poets as Chaucer, Shakespeare, Wordsworth, Shelley, Keats, Burns and Tennyson for the great beginnings of the poetic interpretation of nature in English literature. Geniuses of this class thus lead and stimulate common minds to an appreciation of nature that they otherwise would never attain. As to our appreciation of bird life about us, how much do we not owe to the simple little couplet of Chaucer written more than five hundred years ago:

> "And smale fowles maken melodie,
> That slepen al the night with open yhe."

But much as we prize these older sources, our own American poets have carried this great natureward impulse to its highest perfection. Says Robinson (The Poet's Birds, London, 1883, p. 2), "This holds good of British poets, Tennyson excepted; for the poetry of America marks a perfectly new departure from the stereotyped, artificial and unsympathetic treatment of natural objects which characterizes British verse." And he finds its highest expression in Emerson, Longfellow, Lowell, Holmes, Bryant and Whittier, and, he might have added Whitman, Riley, Lanier, Emily Dickinson, Celia Thaxter, van Dyke and others. To these gifted spirits nature is a perennial fountain of strength, delight and youthfulness. And who does not enjoy life better when they find with Celia Thaxter "the key note of the universe" in the voice of the song sparrow. How much life such a tiny rill of nature's great stream may give.

> "And slowly all my soul with comfort fills,
> And the old hope revives and courage grows;
> Up the deserted shore a fresh tide thrills,
> And like a dream the dark mood melts and goes,
> And with thy joy again will I rejoice:
> God never meant to mock us with that voice."

Another side of our nature literature is represented by the works of Gilbert White, Thoreau, Burroughs, Bolles, Wilson Flagg, Bradford Torrey, Olive Thorne Miller, Jeffries, Hamilton, Gibson and others. Here we have the best nature lore that has ever been written in any language. Our children should revel in it and drink deep, and we rejoice in seeing these great original sources of nature inspiration utilized to the full.

This, however, is but one phase, and a somewhat passive, receptive phase of our nature study problem. It needs to be filled out at every point on the active side by science and productive art. The only point I wish to insist upon here, is, that we do not want any of the technical science of the college and university in elementary schools. For the universal elementary education it should consist, as Jackson puts it, of "learn well those things which no one is permitted to be ignorant of." This fundamental body of nature knowledge may be made a

most important part of our elementary curriculum, but to do this we must needs winnow our natural sciences, especially our biology, clean of chaff, and introduce into this most critical part of our whole educational system, so far as the future of science in this country is concerned, the very wheat of human life. Let university, or even college science branch out into mental gymnastics and all manner of vagarious investigations, the wider the better; for we can never be certain of the human value of truth until it is discovered; but let the body of elementary science be all for sure human good. This point will receive further attention in connection with other methods of nature study.

So far as the book method is followed we should confine ourselves to the genuinely great in nature literature and to the science that lies closest to human life. All the twaddle, which, as Burroughs says, is not worth the paper it is printed on, should be relegated to the waste basket, if every publishing firm in Christendom fails.

We may next consider, what I may call, the logical method of nature study. This standpoint is best represented by the various works of Jackman, especially, perhaps, by his later books, Nature Study and Related Subjects, 1896, and Nature Study for Grammar Grades, 1899.

Taking the latter book for analysis we find that it begins with "Mutual Relations of Plants and Insects: Plants." The equipment of the class is "baskets and small knives." The first thing is a field lesson, the object of which seems to be to discover evidences of the work of insects upon plants in general. Particular plants seem to make little or no difference, although a few are mentioned, among the number, the oak, goldenrod, ironweed, willow, maple, poplar, dock, etc. We note two things thus at the very outset. First, the order by which the child and the race, and we may add every serious investigator, have approached this problem is exactly reversed. The interest of the child and the race certainly did not begin with any such abstractions but with particulars, each of which carried a definite reason as a motive to study. The question has always been, what does this particular insect do to this particular plant? And gradually, and we are as yet but a little way on this long road, we come out to general conceptions of the relations of all insects to all plants, with which Jackman would have us begin with a grammar grade class. Second, for over 4,000 years now we have known that certain plants have important relations to human life, and science has more recently demonstrated that certain insects are so destructive or beneficial that they ought to be known by every member of a civilized community. The great nature study lessons, deep in the experience of the race and the results of the best efforts of modern

science, are thus alike brushed aside like cobwebs and in their place is substituted an abstraction of Jackmanian ingenuity. The second chapter takes up the animal side in the study of insects in general. There are some good hints about making insect nets and a breeding cage. Beyond this the chapter consists of minutiæ of insect anatomy and generalities such as coloration, methods of feeding, moving, laying eggs, etc. The next chapters in order deal with meteorology, astronomy, mineralogy, dissemination of seeds, forms of tree tops. And so it goes on balancing and systematizing every part and phase of the natural universe. Topics from the index may further show the wonderful completeness of the scheme. Adaptations of animal life, air pump, animal movements, astronomy for December, bones, buds, center of gravity, Chart IV, rainfall, colonies of plants, crystallization, dew-point, earth-worm, energy, equilibrium of bodies, eye, food-getting, forecasting the weather, fossils, friction, frog. We are amazed with the completeness and wonderful perfections of the plan, but must confess that it strikes one more like a dream of a paranoiac than a practicable method of elementary education. And in all this completeness, of the great human fundamentals, domestication of animals, cultivation of the soil, there is not even a trace. In the later editions we note the emendation of these features that we were wont to consider the best in the author's earlier books: the aquaria, which placed the child in relation with the fascinating world of life in the water (possibly because a vexatious form of aquarium consisting of glass and wood was adopted) and the garden work. This latter, as I learn from indirect testimony, is due possibly to the fact that the gardens "never amounted to anything;" and it is little wonder that after all the "co-ordinations" with number, geography, mensuration, drawing, expression, mineralogy, and soil analysis, meteorology, astronomy, botany, zoölogy, etc., etc., had been effected, little time, energy or interest was left for practical gardening.

Before summing up the educational values connected with the logical method, we should cite at least one other series of books of very different, and still in this matter of logical perfection, somewhat similar character. The books in this series are: Systematic Science Teaching and Advanced Elementary Science by Howe, published respectively in 1899 and 1900. Like the Jackman scheme, this embraces all creation, everything from the sun, moon and stars down to flies, morals and mosquitoes; but there is another marked feature of the books about which I almost hesitate to offer either criticism, or interpretation. If humorous, it makes them the funniest books, quantitatively, in the language. If serious, then they certainly are the most serious books on elementary science that we have.

Alice Freeman Palmer, in one of her lectures on nature study tells of a little boy who was asked on his return from school: "Well, Johnnie, have you learned lots of nice things to-day?" "No." "Why, how is that; you have been to school, haven't you?" "Yes, but all we learned to-day I have known since long before I was born." Step V in Systematic Science considers common animals and is to be taken near the end of the first grade, *i. e.*, with children about seven years old. The object of the first lessons is to learn the use of external organs from a boy;" and it proceeds as follows:

"*The Boy.* Children know more about their own organs than those of any other animal. Hence begin here and bring out the following points in preparation for following work.

"1. Where do boys live? 'On land.'

"2. Can a boy feel? Where best? (Make tests on exposed parts.)

"3. Can boys hear? What with? How many ears? Where are they placed?

"4. Can he see? What with? Where are the eyes placed? How many? What is the shape of the pupil? How is the eye closed? How many lids to each? Which way do the lids move? Any other use for the lids? (Protect and moisten.) How are the lids kept moist and from rubbing on the eyes?

"5. *Nose.* Where placed? Nostrils directed? Use of smelling?

"6. *Taste.* Where located? Why have we taste?

"7. What ways of moving has a boy? In what position does he 'creep?' How does he 'swim?' Position in 'walking?' How is the foot placed down in walking? How does running differ? How does he 'climb?'

"8. What limbs has a boy? How many legs? How many arms? How many toes? How many fingers? How many nails? Has he a thumb? What can he do with the thumb that he cannot do with any finger? (Place it opposite to fingers.)

"9. How are his legs and arms arranged? (In pairs.)" And so on for two pages more.

On reading this over, as well as a good deal like it, I felt as if suddenly smitten with softening of the brain. At a loss to see any joke in it or any sense, I read it over, quite seriously, to a friend in order to get his reaction. He is an intelligent man and much interested in our problems of elementary education. When I asked him what he made of it, he replied, with some diffidence, as if afraid that he might shock me and hurt my feelings: "Well, I don't pretend to know about it, but it's all mere twaddle to me." I also tried it on a healthy, active school boy, one who has done a good deal of nature study by way of managing aquaria, raising fishes, frogs and toads, run-

ning a successful garden, for fruit, flowers, vegetables and shrubbery, attracting birds to his home, keeping bees, etc., etc. He seemed to be able to see the fun of the thing and was convulsed with laughter. But when we came to "The Cow (No. 57):" "Notice that she has four legs and a cleft hoof with two toes," he burst out with: "I should think the man that set type would have known better than to have put that in."

I do not cite these things in any spirit of levity, for they are really too serious, as they seem to me to reveal one side of the fundamental difficulty we are now having with elementary science work. They, moreover, permeate, like a dry rot, our whole theory and system, since these leaders influence, and more or less dominate the teachers, especially the supervisors of nature study all over the country. This sort of "twaddle" thus often forms the greater part of outlines for nature work prepared by supervisors or superintendents for the guidance of their teachers. I have made quite a collection of these "outlines," and to make my meaning clear, take the following dose of bald abstractions, from one of the very best of them, intended for children of the first grade.

"General knowledge which these nature lessons should emphasize:

"Some objects are animal things.

"Some objects are plant things.

"Some objects are neither.

"Things occupy space.

"Things have weight: things have special weight.

"Things have temperature.

"Things have individual characteristics: they may be hard, soft, good to eat, liquid, solid, dry, wet, smooth, rough, heavy, light, etc."

All these things a child has known practically since he was a year old, "since long before he was born," and so thoroughly that talking about them can only befuddle the mind. *Fit non nascitur.*

To sum up, we might distinguish in this class of nature study two methods, the logical, represented somewhat more in its purity by Jackman, and the twaddle method; but since, when the rigors of adult logic are applied to an elementary presentation of a subject so infinitely complicated as the natural universe, the logic and the twaddle become tangled up beyond hope of separation, it might go by the name of the logico-twaddle method. Out of respect for my many friends who are trying to use it, however, I will continue to call it the logical method.

All such schemes of nature study cover the whole realm of nature just so beautifully thin, and everything is laid out in such orderly fashion that, I should think, nothing could be

better calculated to give a child a notion that he knows everything worth knowing about nature. This I cannot but deem the gravest calamity, educationally, that can happen to a child. A similar calamity befalls a little cucumber, when it turns a rich autumnal yellow before the blossom opens.

Furthermore, this notion of omniscience is after all only a finely wrought up delusion. The child does not know the real universe, but simply somebody else's fine-spun dream of it. In my own experience with this sort of instruction, I have become convinced that the child does not even know what he is talking about much of the time. Now the Creator is ONE, eternally the same and infinite. Men are many, mortal and finite. If any one man comes to really know an infinitesimally small part of the universe, it will suggest enough for him to busy himself about and give him plenty to tell other people about for his little threescore years and ten. For example, Walt Whitman's way of studying the stars, on his back in the grass, after a hard day's work, is good enough for me, at present. And if, when I am called hence, it be to some other star or planet, I hope I may still be content to think that the problems set me to solve, or try at, are those that lie closest to the life about me. Of course, I do not mean to cast any reflections on the science of astronomy. But it is only a few that need know much about such things. I enjoy nothing better than talking over the possibilities of Mars with Dr. Story, while I am resting, and I am heartily glad somebody knows all about astronomy. Possibly, if we are ever able to take the wings of the morning and fly with the speed of thought from star to star, I may take a practical course in astronomy myself. There is plenty of time for that. But really, if everybody knew everything, as these plans of nature study would have it, nobody would have anything to tell anybody else, and the world would be in a condition of stagnation a thousand fold deader than if nobody knew anything.

But this is only a bit of diversion in preparation for the next point, which is that there is a real danger in presenting this vast scheme of the universe to a child, however easy and simple the steps may be made. Dr. Ludwig once said in effect that he thought that the highly abstract sciences were only fit subjects for the highest and bravest souls, and that, in his long and rich experience, he had noted that in less favored cases there was a fatal tendency to mental unbalance. And even the best of men if he be doomed to be continually thinking of whizzing through space at the rate of a thousand miles a minute, or of the infinite in time, space, or process of any sort, must hold tight to his boot-straps and keep his weather eye out for any bulge in the top of his head. He will do well to cultivate

some very mundane hobby, hunting and fishing, cabinet work, or, best of all, perhaps, horticulture and the raising of "garden sass," to keep himself within sight of Old Mother Earth. It would thus seem sheer foolhardiness to launch at best "unbalanced wits" of six or seven, wholesale, upon such unfathomable and tempestuous depths.

This brings us to the final points as to the logical method, *i. e.*, its influence upon teachers and especially children. Teachers have a nerve-wearing enough time of it, and I often wonder how they bear up as well as they do. Between the care of their forty-eight pupils and the wear of merciless supervision, the only wonder is that they all do not go into nervous prostration. I certainly am not conscienceless enough to wish to make life any more of a burden to them in the matter of learning everything there is to know about creation. The Almighty, and possibly we should add Jackman, alone can know it all, and He will reveal it to us according to our strength and in his own good time and way. To put it so that they never can forget it, I often tell teachers that I do not care, so far as my own plan of nature study goes, whether they know beans from hen's eggs, and I do not, if they only enjoy saying, "I don't know, but if you can, find out and tell us." And I tremble for teachers' nerves and for nature study, when I hear of six weeks summer schools of cram. There is a kind of knowledge of nature that lies so close to everyday life that instead of tending toward nervous prostration, it makes life easier, cheerier, buoys it up and makes it more and more worth living. Just this kind of knowledge, in whatever direction a teacher may elect to turn, and the more divergent the choices the better, is all I ask. The practical question is, thus, what can the ordinary teacher do with the logical method. I am apt to ask this question of anybody who may come along. As a single example take the answer of an intelligent supervisor of nature study from the West. What can teachers do with ——'s method? "Nothing whatever. We have had so and so at our teachers' institutes but the teachers did not get a particle of help."

The crucial and final question, however, is what kind of children does it make? Are they led to developing definite lines of interest and work and to carrying them along to some fruitful result? A teacher of first rate medical education, and a close observer on just this point, gave me the following answer without the least hesitation. "What the children do does not amount to anything. It is good neither as work or play; and as to the kind of children it makes, they are not children at all. They are *freaks*." I do not need to dwell longer on a method of nature study that rubs off one particle of bloom from the freshness and beauty of childhood.

A method not so comprehensive and pretentious may be designated as the "scientific" method of nature study. The best expression of it is to be found in the "Guides for Science Teaching," published by the Boston Society of Natural History. Each "Guide," there are now fifteen in the series, takes up some common group of things in the environment of the child and treats it "*scientifically.*" No. I is "About Pebbles," and three of the others are on minerals and rocks, the rest are chiefly systematic and structural zoölogy, with no hint of domestication of animals, and one is "Concerning a Few Common Plants," with no hint that a child might rear one himself. No. XIV, "Hints for Teachers on Physiology," is not included in this discussion, since it belongs to a somewhat distinct field. Possibly on account of the first number, this whole series, especially when I see it being applied in the schoolroom, puts me in mind of feeding a child gravel with a spoon. Take a single example.

The honey bee should have a place in every nature study course. Nothing can be more absorbingly fascinating to children and teachers alike than the busy life of the hive, and its work among the flowers is no less interesting. Honey is an ancient, even proverbial, human good, that children can readily appreciate, and the important function of bees in cross pollination makes one who keeps a swarm of bees a public benefactor in a neighborhood where they have gardens and fruit trees. The "Guide" devotes eight pages and a plate under "Order XV, HYMENOPTERA," to the "honey-bee, *Apis mellifica.*" The plate gives external anatomy, all dissected in orderly fashion, and the greater part of the text is taken up with descriptions of structural and physiological minutiæ. The work of bees in cross pollination is mentioned in an indefinite, abstract way, and the word "honey" (apart from honey-bee) occurs once in the following sentence: "The workers build and repair the comb, collect the honey and pollen, and take care of the young." This simply shows how desiccated and apart from all notions of human good some of our leaders consider that even elementary science should be made.

I happened, by mere chance, to see this lesson as it appeared in a fourth grade class of a "model" school connected with one of the Massachusetts State Normals.

There was not a bee, ant, or wasp, dead or alive, not a bit of comb or nest of any sort, nor a particle of honey; in fact, not a specimen of any kind. On the board was a sketch of a bee and over it the word "Hy-men-op-te-ra." Part of the lesson ran about as follows. Questions by teacher and answers by the pupils will be readily distinguished.

"Into how many parts is the body of a hymenopterous insect

divided?" "Three parts." "What are they called?" "Head, thorax, and abdomen." "Of what parts does the head consist?" "Eyes, antennæ, jaws and tongue." "Into how many parts is the thorax divided?" "Three parts." "Who knows into how many parts the thorax of this bee (pointing to the sketch on the board) is divided?" Hands again went up and one of the children again answered: "Three parts." "Will you count them, please?" The child counted slowly "One, two, three." (Teacher) "One, two, three, and:—what is this other part?" (boy slowly) "F-o-u-r." "Yes, that's right; four parts. The thorax of a hymenopterous insect is divided into *four* parts. That is why we class them as hymenoptera. Always remember, children, that the thorax of a hymenopterous insect is divided into *four* parts. Don't forget that again; for that is the most important fact for you to remember about the hymenoptera."

And so it went on for the whole period. Any one, but the teacher, could see that the class were in the condition of a pulp. The flowers were blooming and the bees were humming just outside this ghastly pedagogical charnel house, but not a breath of all this wondrous life was permitted to enter. "*Fit non nascitur;*" and a few such "lessons" would certainly do enough "fitting" for eternal stupidity.

The thoughtful reader will recognize that "scientific" is really a gross misnomer for this method. I have consequently kept the word closely guarded by quotation marks to indicate that some people call such things "scientific." Huxley defines science as "organized common sense." The two things must go together, organization and common sense, and I submit that no amount of organization of nonsense can make science.

Quite a different point of view is represented by what we may call the æsthetic method of nature study. This method would take nature just as we find it and be content to see and enjoy the beauty of it. It would bring into the course wild-flowers, grasses, trees, butterflies and, possibly, a dash of bird song. All these things are excellent and it is only when they tend to exclude other excellent things that the æsthetic method is in danger of inverting the proper relations of things. Huxley has well stated the case as follows:

"In these times the educational tree seems to me to have its roots in the air, its leaves and flowers in the ground; and, I confess, I should very much like to turn it upside down, so that its roots might be solidly embedded among the facts of nature, and draw thence a sound nutriment for the foliage and fruit of literature and art. No educational system can have any claim to permanence, unless it recognizes the truth that education has two great ends to which everything else must be

subordinated. The one of these is to increase knowledge; the other is to develop the love of right and the hatred of wrong."

"With wisdom and uprightness a nation can make its way worthily, and beauty will follow in the footsteps of the two, even if she be not specially invited; while there is perhaps in the whole world no sight more saddening and revolting than is offered by men sunk in ignorance of everything but what other men have written; seemingly devoid of moral belief or guidance; but with their sense of beauty so keen, and the power of expression so cultivated, that their sensual caterwauling may be almost mistaken for the music of the spheres."

The beauties of nature are made to be enjoyed in peace, and for purposes of nature study I would have our homes and schoolhouses surrounded by them and full of them, but caterwauling about them is no high activity of the soul and is apt to detract from best enjoyment. A further danger connected with the æsthetic method is that it is apt to fall to the level of fancy work, in which children, many of the boys at any rate, are as unable to participate in any whole-souled way as they would be in tatting and crocheting.

Still another form is the museum method of nature study. There is an instinct of no very high order, sometimes called the magpie instinct or the museum instinct. Magpies, crows and jays have it, children are quite apt to develop it, and even some adult men become permanently afflicted with it, and I believe certain monkeys reveal traces of it. I do not know that it can properly be called an instinct, since so few animals show it, and in these it seems to possess no fundamental associations with the serious methods and problems of their lives. At any rate, it may develop as a passion of some sort for heaping together all sorts of things to look at. In proportion as a person becomes interested in the movement and life about him, the museum passion is likely to wane, for no museum specimen can actively do anything in the world; it can only gather dust and moulder and fade, and when one begins to take an active interest in the active side of nature and comes to realize the importance of the common processes going on about him, his eyes are opened and he finds himself living in the midst of an infinitely more wonderful museum than ever systematist dreamed of.

I do not mean to insinuate that for scientific purposes museums are not legitimate enough, but for show purposes they are failures, and in elementary education there is something infinitely better than museums and the cultivation of museum instincts, for this latter may mean that a person gets hypnotized for life with the idea that there is nothing to look at except in museums.

Of course the museum method of nature study is inextrica-

bly tangled up with the logical and scientific methods, and in the school from which I cited the lesson on the hymenoptera it was in evidence on every side. I remember distinctly of noticing a whole flock of stuffed hermit thrushes.

Shortly after my visit to this school, I went to see another, also a Massachusetts model and normal school, and amid all this fault-finding and complaint, as some may be inclined to interpret it, it gives me the most genuine pleasure to describe what I saw. There was little or none of the museum method to be seen. A class started for the woods with its teacher to study birds. On the way we stopped a moment to notice a freshly built oriole's nest. A little further along was a large tree in which the tree swallows were nesting. Down the hill a little way into the woods a branch was gently drawn aside and the whole class was permitted to see a black and white warbler on her nest. There were over twenty in the class, but so quiet was every movement that the little mistress looked up into our faces apparently not the least disturbed and did not leave her nest. In an open glade, well chosen, near a large meadow and marsh on one side and with the deep forest on the other, the class was given a signal and all sat down on the grass and preserved silence. A flicker tuned up back in the woods and a nod from teacher to pupil and back again indicated that it was recognized. Robins, blackbirds, peewes, orioles, grossbeaks, a wood thrush, various warblers and others were listened to and examination passed upon their various notes, all within the most ideal half hour of living nature study I ever experienced. We then went on to a bobolink meadow and down into some deep woods again to an ovenbird's nest.

We returned to the school of brick walls in time for a large class also in the study of birds. Here the entire recitation consisted in questions and answers upon what each pupil had learned solely from the living birds that he had been able to hear, see or watch in their nest building. I never in my life heard a more animated and interesting recitation. The secret of it was that each one had perfectly new, fresh and original information to impart, not dead stuff which all had alike tried to resurrect from a book, but truly "worthy and delightful knowledge" which its possessor was happy to impart and which teacher and all the pupils were interested to learn.

In the primary room of the same model school I saw something else that caused me to thank God and take courage. It was a seedling *oak* about four inches tall, growing in a pot in the window, of *s–o–i–l*, not sawdust or sand, and it had not been dug up to draw, but lived as the hope and delight of a merry room full of children who were planning soon to plant it carefully outside and raise an oak tree. The teacher was a young

English girl, and it is the only case of an oak tree really growing in a schoolroom and in the hearts of the children that I have ever seen. But in it is the germinal hope of American reforestation. (To save possible correspondence I will take the liberty to state that this refers to the Fitchburg Normal School, Fitchburg, Mass.)

With any who do not think with me that this is better than wasting time with museum specimens further evidence is useless. Of course, for the museum method to be developed in a few large centers, where living and active methods of study are impossible, it is quite another matter. But for every town and country district to gather a school museum, as is sometimes urged, means an infinite waste of valuable life and worse than waste of time. However, the method may be indefinitely indulged, as a safety valve, if such be needed, and really, too, with very good advantage, in the matter of insect collections. By having the pupils mount them in convenient little hand cases, as the Gypsy Moth Commission has arranged its collections, to show the egg, egg cluster, larvæ of different sizes, pupæ, moulted skins, and male and female adult insects, together with eaten leaves, stings and gall of their food plants, the series can be made to tell the story of an insect's life and wonderful transformations in a way that it would be difficult to find at any one time in living nature. If the insects be those that every member of the community ought to know in order to avoid loss to himself or injury to his neighbor, *i. e.*, "to develop the love of the right and the hatred of the wrong," such collections, even if not so complete, become most useful instruments of instruction in a field where it is difficult to impart clear ideas without them.

There are a good many more methods of nature study that space permits me to mention scarcely more than by name. For primary grades Dr. Wilson's mytho-poetic method is admissible, though scarcely complete. Then there is the sugar-coated-pill method by which the attempt is made to stuff in a modicum of "scientific" information under cover of what some may be inclined to call "poetry." So collections are made which must contain a "poem" about every flower or animal, or other phenomenon of nature, even though, as a friend once remarked to me, they have to saw it out with a bucksaw. A "poem" entitled "The Body," taken from "Nature in Verse" begins thus:

> "From the top of my head to my tiny toes,
> I am built of bones as every one knows."

Any one with sufficient perseverance can supply the remaining twelve couplets, if they care to. Or take a dose from one entitled: "The Setting Sun."

"Dear John, the sun is setting now:
Behold him in the West;
And all the children now must soon
Lie down and go to rest.
. . . . . .
"But when the sun comes round again,
And rises in our East,
Then evening will begin with them,
And they to bed will haste."

Or take a sample from a "poem" entitled: "The Raccoon."

"Come, child, and see our pet raccoon,—
The raccoons live in the woods, you know,
But ours was caught and caged and brought
From old Virginia, long ago.
. . . . . .
"His fur, you see, is yellowish gray,—
And he is nearly two feet long;
He lives on roots, and nuts and fruits,
When he's his native woods among."

"*Fit non nascitur.*" It is little wonder I hear children in school exclaim, "I hate poetry."

We hear a good deal about the excursion method, and under certain circumstances it may be used to advantage, but it is likely to be the case that the best things in nature can be better studied either alone or in groups of two or three. Most of the actual nature study must be thus individual, as represented in the second lesson in the Fitchburg school described above: while excursions may be utilized for general demonstrations and practical examinations.

A final method of nature study, which on account of its prominence just now we ought not to pass by, we may call the knot-hole method. It has been developed by the genial Professor Bailey of Cornell. It consists typically of picking up on the street, or anywhere else, a sliver of pine, a straw, a broom-splint, any bit of garbage, or if nothing of that sort is at hand, a knot-hole does very well. One can usually find a knot-hole about the wood work of the schoolroom, and around it the genial professor can spin a most wonderful web of the finest yarn. By this method, the teacher need never be at loss for "nature study material," and one thing is as good, or as good for nothing, as another. He may thus begin with a knot-hole, or anything else, and as by magic, evolve a pine tree and its mode of growth, a pine forest, methods of forestry culture, lumbering, saw-milling and no end of other things. This method may be made very bright, witty, even funny by the sportive gambols of the imagination. It might serve a useful purpose to amuse a tired school for an hour on a sultry day; but I fail to see wherein any appreciable "increase of knowledge" is

attained or how it can serve to "develop love of right and the hatred of the wrong."

This is a most vital matter for nature study for the whole country, because New York State has taken the lead in making liberal appropriations of money to promote this particular study, and this has been done largely with the laudable purpose of stemming the cityward tide that is depopulating rural districts by giving sufficient knowledge of the forces and possibilities of nature to enable people to maintain happy homes in the country and gain a livelihood by a more perfect utilization of natural resources. Many other States are looking on to see how it "pays," and what the output is. A series of nature study leaflets has been issued and they have spread like wildfire over the State and the whole country. Over 20,000 teachers in New York State alone have applied for them up to last accounts, and the tendency has naturally been to interpret this lively demand as indicating the success of the undertaking. This is quite premature; for the great demand for the leaflets indicates only a great need of something sensible in the way of nature study. The matured judgment of this great body of teachers has not been handed down. As leaflet after leaflet has come, I have not been able to down the conviction that this most splendid opportunity for nature study ever offered in the history of our system of education was being seriously trifled with. I am very much afraid that this genial knot-hole business will not carry up indefinitely. A squash seed knows all about how to germinate, and, while it may form a valuable lesson for college botany, the only fundamental reason for planting a squash seed is to raise the finest squashes possible. As a farmer boy, I know from happy experience the educational value of a bit of garden and a piece of land that I could call my own farm, but I fail to see where "egg-shell farming" is calculated to strengthen either the moral, mental or physical powers of a child. Common oaks are treated according to their botanical classification, but with no hint of planting an acorn. The common toad forms the subject of a larger leaflet, and what the children, as it would seem, ought to be encouraged to observe in the pools about their homes for themselves, is told in detail, both by text and elaborate picture, so that they may learn it all from a book, and there is no hint of a child's actually rearing them to utilize as a force in nature. According to Kirkland's estimate of $19.88 as the possible annual value of a single toad's work to the community in destruction of cutworms, any child might rear $10,000 worth of them every season at practically no expense, until ground feeding insects and many others became curiosities in his section, and he would be much the wiser and the better for the work.

Some years ago Rochester was devastated by armies of caterpillars of the white-marked-tussock moth. The way the school children cleaned them up by collecting the egg clusters forms one of the most interesting nature study lessons on record. The Bureau of Nature Study at Cornell begs for criticism and suggestion, and hoping that this might be made an inspiration for the clearer understanding of the insect pest problem in every town and district in the land, I wrote a suggestion that the story be made a nature study leaflet. That was three years ago.

About the same time Slingerland brought out a remarkably fine study on the Codling moth (and he has just recently followed it with one on the peach borer), giving its whole life history and all the most approved methods of combatting this worst enemy of our apple crop. In my humble plan of nature study, I would have a child, wherever possible, actually rear an apple and peach tree of his very own and in the best manner known to modern horticultural science. I actually knew of a boy who became interested in the Codling moth from Slingerland's bulletin, saving $150 worth of apples in one season from the trees on his city lot. If the children are to succeed with their trees, they must know about these insects, and I "suggested" a leaflet again. The estimated annual loss to New York State alone from this one insect is $3,500,000. With the problem clearly before them I dare say the children of the State might have raised woodpeckers, bats and nuthatches enough to have gone a long ways toward clearing the State of Codling moths by this time. They would have been greatly developed, in my estimation, both in knowledge and in virtue, and would have enjoyed the work exceedingly.

Professor Bailey is an authority on horticulture and he has written a book entitled "Lessons With Plants." It purports to be elementary and intended for beginners. I submit that nine-tenths of the text is college botany, details of buds, stems, leaves, roots, etc. An elementary botany, embodying the knowledge of the culture of plants such as that acquired by the race thousands of years before formal botany was dreamed of, arranged solely according to the human value of the plants to be cultivated, which, in fact, laid all the foundations of worthwhileness for the evolution of modern botany; such an elementary botany has never been written, but is sorely needed. Instead of coming out with this fundamental, perennially worthy and delightful knowledge which would aid a child to make his home a paradise of living plants, the book ends with "classification of Species," "Linnæus," "Asa Gray," the botanical press and the old tin coffin for flowers.

In working through all the methods of nature study I have

been able to find, I have been impressed at so many points by their passive, receptive character, their flabbiness that I have been led to develop what I call the active method. Even a dog cannot be happy and develop any character worthy of the name without something that appeals to him as worth his while to do. Without this, life becomes a burden and even a dog, a pessimist. In line with the foundation principles laid down in the previous chapters the active method of nature study is that which attempts to present to the child those things in the nature about him, which, step by step and from his own point of view are the best things, *i. e.*, the fullest of real human good, of anything he is able to learn and especially to do. Bailey's epigrammatic definition of nature study: "seeing the things which one looks at and the drawing of proper conclusions from what one sees"—which has quite taken the country by storm—contains the very heart and essence of this flabbiness and passivity against which I am contending. Is the nature study of the race for tens and possibly hundreds of thousands of years to go for nothing? Does this long, infinite series of experiments, coupled with the contributions of all modern science avail nothing by way of telling us what things are worth while looking at? Must we stop to look at every straw, bit of garbage and knot hole in our way? And when we have drawn the "proper conclusions," what then? Here is where the real struggle begins. Where is the indomitable human will that has been evolved from eons of active struggle and work *worthwhile?* Is that all to rot and deliquesee in "proper conclusions" about knot-holes?

The child is born freighted with this priceless treasure of the ages, tempestuous will, incessant activity, passionate interest in everything. It will come soon enough at the best we can do; but why deliberately sickly him o'er with the pale cast of adult "proper conclusions," so soon?

> "Not in entire forgetfulness,
> And not in utter nakedness,
> But trailing clouds of glory do we come
> From God, who is our home."

Modern evolution gives these words an infinitely deeper meaning than even Wordsworth could have known. Long before birth impulses to move the limbs develop and in early infancy the nervous mechanisms are perfected so that not only is efficient utilization possible but a large number of their movements are relegated to the spinal cord in order to leave the brain free to attend to more important matters. The number of arms and legs best calculated to render the vertebrate organism most efficient was all counted out and determined upon by the devonian fishes. The action of the eyelids and tear glands has

been turned over to the efficient management of reflex action from the frogs up. Why revert to invertebrates and be raking up all these old scores? Why laboriously haul them up into consciousness, when we are all equipped for vertebrate action and there is plenty else to do?

How many children ever grow into the fullest realization of every good possibility of their infancy? Why must "shades of the prison house begin to close upon the growing boy?" However rare it may be, still it is true that we do sometimes see the charm of childlikeness continued even to the end of old age, the open-eyed interest, the eager, happy activity, the rapid growth.

> "Thou best philosopher, who yet doth keep
> Thy heritage, thou eye among the blind.
> . . . . . .
> "Thou little child, yet glorious in the might
> Of heaven-born freedom on thy being's height."

If we can find a nature study vital enough, we may have more Wordsworth's in the world; but it must be full of

> "Delight and liberty, the simple creed
> Of childhood, whether busy or at rest.
> Of singing birds and gladness of the way,
> Of splendor in the grass, and glory in the flower."

Providentially shielded from language until about three, the child learns nature by the active method and progresses with, some bumps to be sure, but with infinite delight and wonderful rapidity. I can find no reason either in the nature and philosophy of things or in the exigencies of our school system for breaking off this splendid growth process so abruptly at the beginning of school life. And can it be said that our schools are free from all semblance of "shades of the prison house?" Is there any truth in the beautiful words of Jackman on this point? "He (the child) comes to the teacher with his eyes filled with a thousand pictures, but these are ignored, and he is robbed of them one by one, until the beauty of this world fades from his sight, and it is changed to a vale of tears." I think there is, and Huxley certainly agrees. Can we not educate and agitate against repression and substitution of the child's natural intellectual appetites that is making nine children out of ten stupid and commonplace?

I know we are living in an age of neo-fatalism caused by wall-eyed blindness to the most momentous fact that modern neurology has contributed to pedagogy, the wonderful plasticity of the growing brain, and to a totally inadequate conception of the doctrine of heredity. And so we have as a proverb, time honored, I know, "Poets are born not made," but I repudiate and anathematize it. And so we have genius of all sorts "born

not made." And even Celia Thaxter must go out of her way to insist that love of flowers is "born not made." (Island Garden, p. 5.) And so it is with everything, mechanical skill and business ability, tendency to commit crime, addiction to alcohol; wherever I turn, I find philosophies of life ghastly with this fatalistic decay. Lack of space precludes more extended argument. Suffice it to say that things commonly ascribed to heredity may perfectly well have been learned; and, on the side of brain plasticity, two brains may be alike cell for cell and fiber for fiber and yet the cells *act* quite differently. But we are slow to appreciate the educational bearing of the fact that the brain is wonderfully precocious in its development. It almost reaches its adult size at three and may do so quite by seven or eight. An elaborate study has recently appeared in the Journal of Education, comparing the Jukes and Edwards families. Of course there are all degrees of variation in certain matters of physical organization which may influence the dominance of the brain over the whole, but, I take it, that any one who is a fitting teacher of the young will agree with me when I say: transfer babies on the day of birth, and a Jukes baby might have grown to be an Edwards, or *vice versa*.

Nothing is being more fully recognized at present than the passion of children to imitate, and their wonderful plasticity in this respect. Hence, it does not at all follow, that a plan of school work is good, because the children take to it readily and become as enthusiastic as their teacher may be about it. We need deeper criteria of educational value than this, and we have already discussed these criteria in the foregoing chapters. It remains only to add that this very plasticity of the youthful mind should make us all the more careful to apply these fundamental, *human*, criteria to every part of a nature study course. If we do not do this, we run the risk of encountering two terrific dangers as to the child's future, and these are not on either side, like Scylla and Charybdis: for we have no business to steer anywhere near either of them.

One danger is that by substituting superficial and technical for the deeper human relations a child's normal relation towards nature may be ruined for life. As John Fiske has so luminously shown, human infancy is a prolonged period of plasticity for education that must support the strain of after life. If the time is wasted on trivialities, there will be no foundations laid. To change the figure, if the exuberant growth of youth is turned aside, when school is over and the stimulus to imitation ceases, all acquisitions not related to after life are apt to die back to the root, and the vigor of youth being spent, no symetrical growth is possible, and the dead stubs remain only as encumbrances, apt to rot down and hollow out the whole trunk. But both

these figures fail to adequately express my thought. Wordsworth can help us out again, if we are able to realize vividly that it is not thanks to any superficial knowledge as to calyx, corolla, stamens, pistils, etc., but:—

> "Thanks to the human heart by which we live,
> Thanks to its tenderness, its joys and fears,
> To me the meanest flower that blows can give
> Thoughts that do often lie too deep for tears."

The second danger is pessimism. In my laboratory experience I have made innumerable series of embryological sections, until studying developmental phases has become a habit of mind. Whenever a pessimist turns up I section him mentally and morally, about as follows: As a boy he was set to learning something. He learned it with diligence and fidelity. After he had learned it, he found that it was "*no good.*" He was next set to learn something else and found that that also was "*no use.*" So years are spent, and, "mocked and deluded all this while with ragged Notions and Babblements, while he expected worthy and delightful Knowledge," he develops, as any embryo similarly treated would, into something moribund, more dead than alive,—a pessimist.

In treating of the foundations of nature study it is no part of my task to develop the superstructure, which, of course, relates to the subject matter, arrangement, and details of the course. In discussing the different methods I have endeavored to grapple with the fundamental theories underlying their conception. Loving those best whose points of view differ most from my own, I have been obliged to speak the truth as I see it myself.

The theory underlying the active method is simply that for public, common-school nature study the whole course should group itself about the main axis of fundamental human goods, religious, ethical, educational, æsthetic, economical, all combined. A child is thus given something to learn and to do. He does it and is surprised at the amount of good he finds he has done. As this goes on from day to day and year to year he feels the sources of power to do good growing strong within him. While differing in many essential respects, Lange in his Nature Study, and especially in his book on Our Native Birds, approaches this standpoint rather more closely than any other writer.

I have been obliged to leave much to be read between the lines; but in the light of all that has been said the whole subject may be summed up in my own definition of nature study, which is: *learning those things best worth knowing, and doing those things that make life most worth living.*

THE RECONSTRUCTION OF THE KINDERGARTEN.

By FREDERICK EBY, Fellow in Psychology, Clark University.

The kindergarten is the most unique factor in the complex machinery of modern education. It was the product of one master mind, and for more than half a century it has retained, comparatively unaltered, the form originally received. In this respect it is in the sharpest contrast to elementary and also secondary education. Their methods and principles have never found classical expression in any unitary system acceptable to the majority of thinking men. The strife of the multitude of conflicting views and opinions has been long and discouraging, and even yet there is no sign that this sad educational confusion is, in the words of Spencer, about to pass from "the disagreement of the enquiring to the unanimity of the wise."

Hitherto the kindergarten has been largely free from this inner struggle and confusion incident to the birth and growth of the other schools. The advocates of this most successful movement for infant training have faithfully guarded and practiced the teachings and methods of their inspiring leader, Friedrich Froebel. This conservative attitude has been, in no degree, a hinderance, but rather an incentive to the remarkable rapidity and continued triumph of the kindergarten throughout the entire civilized world. As in every new movement, this conservative spirit has been most beneficial in sustaining the enthusiasm and uniting the efforts of its advocates, until the kindergarten is impregnably established in our modern society.

Whatever personal prejudice may still linger among certain educators and laymen, it is now indisputable that the kindergarten fills an essential want, and must, therefore, be regarded as an organic part of the totality of developmental forces, along with the home, the play-ground, the elementary school, and the Sunday school. Accepting this as a fact that need not be proved in the province of this paper, it is possible to define, in a measure, the problem which lies before us.

It has just been pointed out that unlike education in general the kindergarten began with a body of principles, methods, materials, and organization fully developed and accepted as such by all its advocates. In this respect it has been far beyond its age, so that until recent years no one who has sympathized

with the movement, recognized its importance, and understood its principles and methods, has dared to suggest that the kindergarten may have grave defects which are very injurious to the children entrusted to it. However, coincident with the rise of child psychology, or better, genetic psychology, and the later investigations into the hygiene of the physical development of children, many serious questionings have arisen among practical kindergartners themselves. The outcome of this awakened interest in infant development from the biological and genetic sides is the separation of the kindergartners into two camps, representing respectfully conservative and reform ideals. The party making for progress exhibits an increasing eagerness to break away from what they regard as a narrow Froebelianism; they believe in introducing new methods, new plays and games, and insist on reconstructing the kindergarten in harmony with child study and the nursery. Their opponents with equal zeal insist that Froebel must be read more closely and followed more intelligently; he may have made a few errors in details but the fundamental and essential principles he has stated, are beyond discussion; investigation has in no way disproved Froebel's authority, but elucidated, enlarged, and confirmed it. New methods may be good in some few instances, but they must not interfere with the tried and proved plays and gifts of father Froebel.

With neither of these two parties do we engage. Our task is merely to make a critical examination of these divergent points of dispute to determine, in a measure at least, wherein the path of greatest progress may lie for this great educational organ, which has made even its enemies its admiring devotees.

For convenience of discussion the problems that grow out of the debate may be summarized under three heads:

1. Discussion of the philosophical and pedagogical principles underlying the kindergarten;
2. Questions of technique and practice; and finally,
3. The hygiene of the kindergarten.

Under the first head may be grouped (a) the conflict over the application and the worth of the "law of the connection of contrasts," and the consequent discussion of the value of the gifts and occupations as a closed system of play-materials. (b) Here, too, will come a thorough clearing up of the sad confusion that has rested so long upon the question of kindergarten symbolism; and with this the tendency to sentimentality, which has been so obnoxious to many critics. (c) Finally, it is to the best interests of all to examine *de novo* Froebel's teachings in order to learn where his chief emphasis was placed, and in what regard his principles must be modified to suit the varying conditions of our American children.

The questions of technique refer mainly to the discussion of the nature and suitability of the materials to be used in plays, games, songs, stories, etc. It will also include the consideration of programmes for season and week, time-tables, discipline, and the value of the circle and other practices.

One of the most important chapters of the kindergarten education has been too sadly overlooked. It is time the few facts that have been gathered on the hygiene of the kindergarten be collected and discussed. (a) This will embrace a study of the sanitary conditions of the buildings, heating, lighting, ventilation, etc., also personal hygiene of the individual children within and without the kindergarten building. (b) Still more important will be the questions of habit or automatisms from incessant clapping, hopping, and such similar movements too frequently repeated, and the danger of too much specialized physical activity of certain muscular and nerve groups, and too slight use of others. (c) Finally, there must be some study of nervousness arising from social excitement, overstimulation, too minute work, fatigue, strained attention, prolonged hours and similar causes.

It remains to mark some delimitations of the subject. The problem of the relation of the kindergarten to the home, which will always remain of the most vital importance, can be touched only in a cursory and incidental manner. The relation to the school must also be side-tracked in the present discussion. For many years this relation to the school has received undue prominence. There has been a tendency on the part of some, to think that the kindergarten should submit to the restricting domination from above, which has worked so much mischief in primary and secondary education. Froebel never intended the kindergarten to be a preparatory school for the elementary grades. He is very emphatic on this point. When he founded the kindergarten he expressly stated that it must not be a school in the same sense as the higher schools. Yet at the same time he is very clear in maintaining that a close connection does exist; but to discuss what this relation ought to be would demand the consideration and entire reconstruction of pre-adolescent education.

Gifts and Occupations.

The Law of the Connection of Contrasts.

There is little doubt that, when Friedrich Froebel is more fully understood, he will be recognized as one of the greatest educational geniuses of the 19th century. Many before him had felt as strongly the need of training for infants and small children, but he saw more clearly than all the fundamental

principles of individual development, and the educational means of attaining it. Many had felt the intrinsic value of the play instincts of children, but he alone has taught the world a practical method of using these instincts for the complete unfolding of each individual child. Pestalozzi recognized the inherent necessity of utilizing the impulse to play, but in his eagerness for social and moral reform he turned it to industrial channels. Rousseau, also, urged the demand for free activity and play, yet he omitted the social element and did not perceive the necessity of directing, or at least controlling, the plays of little children. In Froebel, then, we have the best word ever said on the plays of children and how they may be encouraged and conducted in channels of educational value. In his gifts and games there is a complete system of connected materials for the use of the child. They are designed to satisfy the instincts for building, for representing, for training in habits of usful work, and for developing the intellectual and social instincts. We may not agree with the choice, still, it must be granted, it is the best complete system that has ever been devised for the free all-sided development of infants from three to six years of age.

The first important question for our discussion is, naturally, for what purpose did Froebel design these twenty gifts and occupations? It is very fortunate we have his own explicit statement. He desired to meet two imperative needs: first, to arouse in all parents and teachers a deep interest in the education of little children, and to give them an opportunity for their own mental culture; and secondly, the necessary means for the mental nourishment of the children themselves. In drafting the plan of the kindergarten, he writes: He desired "To provide plays and means of employment (consequently of culture) which satisfy the needs alike of parents and child, of age and youth, of educator and pupil; which, therefore, nourish and strengthen, develop and form the life of the children, as well as promote the life of the parents and adults—or at least, afford them spiritual and intellectual nourishment while they employ themselves in playing with the children—indeed, we might even say while they, as experienced and intelligent parents, and observant and clear-sighted older people, merely observe the plays and spontaneous employments of these children in a thoughtful manner—that is, with spiritual and intellectual sympathy."[1]

Froebel had two most essential objects to gain; he planned not only for the children but quite as much for the parents and teachers. He aimed to furnish adults a means for their own

[1] Froebel: Pedagogics of the Kindergarten, p. 18.

intellectual nourishment, and also to arouse in them a permanent interest in the development and education of their young. No desideratum is more necessary to-day. But while Froebel was responsive to the profound necessity of bringing parents closer to their children; that we should "live with our children;" he believed that this union must be mediated by a common interest in some third object, the gifts. This is an erroneous and injurious belief that holds that the child and the adult can normally be interested in the same circle of experiences, only that the child's circle is smaller than that of the adult. A similar fallacy on the physical side has been that the child is merely a diminutive adult, and needs merely to grow proportionally in all its members to become an adult. But the child's interests are *sui generis;* they do not differ from the adults merely in extent, but more in kind, not only in quantity but in quality. This error on the part of Froebel has been the cause of some serious defects in his system, as we shall endeavor to point out.

Starting out with the purpose of constructing a series of gifts for the adult and child, Froebel used as his guide a principle which he and his followers believe to be the most pregnant and fundamental law of the cosmos. "The law of development," he said, "is the general natural law of the macrocosm, and the law of development through self-activity, productivity, is the highest law of the Makroanthropos and the Mikroanthropos."[1] This law is of paramount importance for the kindergarten philosophy. It is the shibboleth of its devotees. Froebel called it the "Stecken und Stab" on which he "als Erzieher aufgeschwungen hat." It is at once the ready explanation of the universe, a religious cult, a psychological theory and a scientific fact. They believe that its validity is such that one of the greatest leaders has prophesied that "By and by, Froebel's educational law will be accepted as distinctly and independently as Newton's law of gravitation."[2]

How this principle arose in the mind of Froebel is partly veiled in obscurity. It is in some respects the result of his own mental activity, but also the product of the philosophical atmosphere of his day and Fatherland. In such a discussion one must keep in mind that Froebel was scientist and philosopher, mystic and logician at the same time. One must also remember that he lacked the ability of expressing his thoughts clearly and in the language of his contemporaries. That Froebel owed this law to his contemporaries and that he worked it out independently in education we may accept on the authority of

[1] Hauschmann: Friedrich Froebel, p. ix.
[2] B. von Marenholz-Buelow: Reminiscences of Froebel, p. 237.

Koehler.[1] He has shown that it is the law of polarization of the philosophy of identity of Fichte, Schelling and others.

To understand Froebel's theory of education or the materials which he has invented, it is necessary to hold in mind his general philosophical views; for from these philosophical conceptions of the universe he has deduced those vital and fruitful principles which mark him as a seer. This is also necessary for an adequate comprehension of the law of contrasts now under discussion.

Froebel may be said to be the first monistic theorist who has systematically applied his philosophical conceptions to education. He introduces us at once to his views in the first words of the "Education of Man."

"In all things there lives and reigns an eternal law. . . . This all-controlling law is necessarily based on an all-pervading, energetic, living, self-conscious, and hence eternal Unity. . . .

"This Unity is God. All things have come from the Divine Unity, from God, and have their origin in the divine Unity, in God alone. . . . All things are only through the divine effluence that lives in them. The divine effluence that lives in each thing is the essence of each thing."[2]

Now this divine energizing "Unity," in whom we and all things, "live and move and have our being," is constantly expressing his nature according to one uniform and universal law, which can be seen alike in the form of the crystal, the evolution of the vegetable and animal species, and even in the mental and spiritual life of man. This law of contrasts is the supreme formula of the universe of matter and mind.

According to this all-prevading principle of creation, every object, state, or quality has its opposite; in other words, every thesis has its antithesis, and both of these disappear in a final synthesis. Many concrete examples may be given, for Froebel took a delight in elaborating this logical process in every direction. In a conversation with Diesterweg, he said: "What other objects of our knowledge exist but God, Nature, Man?

"What other task can our intellect have than to find the relation between these three sole existing objects?

"The first thing for the human mind is, to draw the synthesis, God in nature, nature from God (the history of creation); then follows the synthesis, the divine spirit in humanity, the human spirit from God."[3] Again, in another place: "The law of connection is the fundamental law in the universe, the fundamental law of the visible and the in-

[1] Koehler: Die Praxis des Kindergartens. Band III, p. 42.
[2] Froebel: Education of Man, p. 1.
[3] B. von Marenholz-Buelow: Reminiscences of Friedrich Froebel, p. 185.

visible, of the spiritual and of the corporeal world, man and humanity are the representatives of this law, for man and humanity stand in the universe between God and the creation."[1]

This law of Froebel is, therefore, nothing but the logical principle of analysis and synthesis which, educational psychologists affirm, governs all mental operations of the child and adult alike, and must be the guiding principle in the choice and arrangement of the materials to be given to the child. But the characteristic which marks Froebel's use of the law is, that for him it is not merely the process by which the human mind takes up and works over its knowledge; it is for him the universal law of all development. It governs the unfolding of natural objects as well as the human mind. By it the tree grows. "The seed (unity) divides in the germ into duality (difference or opposition), and all the various stages of development follow definitely and clearly to full completion. The roots and the crown are the opposite equivalents." These two opposites in the phenomena are connected by the trunk.[2] By this law the crystal forms, by it language grows. By it the child unfolds into the adult human being. By it all growth and development, whether of organic or inorganic, of mental or spiritual existences takes place.

Whatever may be the worth and application of such an abstract principle of logic for the theory of knowledge or for metaphysics, it is not our business to inquire here. But it is certain that it led Froebel and his followers into some absurd and fantastical statements. He did, in fact, become the victim of his own speculations. He contracted the habit of seeking in all the phenomena of the world the operation of this mystical law. Instead of acquiring a larger knowledge, fresh facts to stimulate the mind, symbolist that he was, he was satisfied to turn over the old formulas, intent on finding in them the hidden meaning by which to unlock all the mysteries of the universe.

That Froebel's mind tended in this direction we cannot doubt, when we consider how indefatigably he labored to impress this process upon all departments of knowledge and life. A good example of this will be seen in his theory of the development of language. It consists for him of words, or symbols, that form the "connecting" link between the subject and the object, or, between the outer and the inner world. A further distinction is made between vowels and consonants. "In general he arrives at the law that vowels represent the

[1] Froebel: Education by Development, p. 31.
[2] B. von Marenholz: *ibid.*, p. 31.

inner, or unity; consonants, the outer, or individuality; and semi-vowels, the mediations, or diversity.[1]

It may be more pardonable for one with such a predominantly symbolic and mystical habit of mind to entertain such naïve ideas, particularly when he has also a profound insight into the development of the human soul; but it is far less excusable in others. If Froebel was extravagant in his applications of this principle, some of his followers have outrun him in the same extravagance. Even so careful a thinker and so beloved a teacher as the Baroness B. von Marenholz-Buelow must be charged with idolizing and worshipping this logical fetish. She went so far as to apply it to the most common actions of life. "Our muscular system," she tells us, "consists of the so-called contracting and extensor muscles, which form a connection of opposites by their functions of drawing in and stretching out. The combination in which they appear in the organism is the connection of the opposites. Now when, in the gymnastic exercises, we tell the children to stretch out their arms and then draw them back, cannot they comprehend that they are connecting these opposite functions?" [2]

This service of explaining how the muscles of our arms and limbs proceed, may be harmless enough, but when this law is forced upon the child and becomes the strait-jacket in which he is compelled to act, then we must call a halt. Every one to-day is aware that in drawing the child makes best progress when he has the utmost freedom of movement and choice. But the law of contrasts distinctly forbids such freedom. "Without applying this law," we are informed, "a child would not be able to form any regular figures, still less to invent them. With this law he has received a regulator for the formation of his figures, which leads him on to almost inexhaustible variations and modifications."[3]

We would be much afraid that after all we are fighting "extinct satans" were it not true that, although the extreme applications of this law to creative activity has been abandoned, it is still very much alive in other departments of educational theory. We must examine its value as a basis for the choice of materials to be presented to the mind of the child, and this brings us face to face with some of the most naïve forms of the Froebelian symbolism.

In choosing and arranging the forms that make up the Gifts and Occupations as a connected, coherent, and logical series,

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[1] Froebel: Education of Man, p. 216. (Hailmann Edition.)
[2] B. von Marenholz-Buelow: The New Education By Work, p. 62.
[3] Goldammer: The Kindergarten. A Guide to Froebel's Method of Education, Gifts and Occupations. Introduction by B. von Buelow. Translation by Wm. Wright. pp. xxiii.

Froebel had three main conditions to satisfy. In the first place he felt that the child must not be confused by having thrust upon his attention an innumerable array of natural objects. Nature is so prodigal of her beauties; she calls the child from one interest to another in the most capricious manner. But just for this reason the intellect of the child must be protected from the "variety and multiplicity of things." The attention of the child must be directed from the vast array of objects and must center more and more in the "ever living unity that is in all things."[1] And finally, it is of the most essential importance that the child should be led on to self-consciousness in a manner perfectly clear to himself, and he must, therefore, have mirrored to him, in the outer objective world, the logical processes of development in his own mental life.

It will be of value for us to take a closer view of these three requirements and thus discover wherein they have importance. Let us then consider each from the Froebelian standpoint and reserve our discussion for the end.

Froebel was a most enthusiastic student of all the phenomena of nature, and never ceased to believe that the study of natural objects must be a veritable corner stone in the educational structure. Moreover, he was not merely an interested, but casual, observer; his mind, in spite of his symbolic bent, was of a scientific cast which sought to formulate in scientific conceptions the facts of the outer world. Consequently, he felt that the child would be confused by a conglomerate series of experiences and observations of animals, trees, plants, stones, and a host of similar things. His experiences must be limited, or, at least, regulated, in such a way that these innumerable stimuli will fall into something like scientific or orderly connection. In other words the child must have an A. B. C. of objects, and their qualities and relations, just as he must have an alphabet of language and literature. This alphabet of form, color, movement, etc., must come between the child and nature, as the great interpreter, the "Stellvertrater." "By herself nature, with her phenomena, on the one hand, stands too close to human beings; on the other, she is too far removed. Therefore, the child has need of a third mediating element, which, as it were, unites in itself the properties of every microcosm (Gliedganzes) of nature and of the child as the microcosm of the absolute life (All-Lebens). This third element is the ball."[2] Thus we see that in obedience to his great law Froebel places between the two opposites, the child and nature, the ball, which is the key stone and foundation of the Gifts and Occupations.

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[1] Froebel: Education of Man, p. 134. (Hailmann edition.)

[2] Vortrag Froebel's gehalten in Gegenwart Ihrer Majestät der Konig von Sachsen, Januar, 1839.

Furthermore, Froebel believed that it was most essential for the child early to recognize this all-embracing law in its inner self and in all things. The most natural starting point for building up a circle of thought is, therefore, to begin by presenting to the child a representation, or symbol, of the original "Unity." For this reason Froebel chose the ball as the first plaything of the child, and hence it has become the center and fetish of his system. For him "Even the word Ball, ... is full of expression and meaning, pointing out that the ball is, as it were, an image of the All (der B—,all ist ein Bild des All)."[1]

The ball represents the primal unity of existence out of which all being springs. From this starting point we must pass to the "Sphere" which is the opposite of the "Ball" in many respects.[2]

From the sphere it is but a step to the cube through the cylinder as the mediating link uniting them. In this manner Froebel worked out his whole system of kindergarten materials, by analysis and synthesis, from the solid to the line and point, and back again through figures without solidity, from the simple to the complex, from the generic to the individual, and from the known, as he thought, to the unknown. This movement is, in fact, nothing but the greater unfolding of the cosmological development of the universe from God, the absolute "Unity," to the multitudinous diversity of natural and spiritual existences. As the Baroness von Buelow has expressed it, interpreting her teacher: "That is to say imitating God's world in miniature so to organize material that it satisfies the human need, or realizes a thought of beauty, or facilitates knowledge, and thus forms in the actual that which makes the subject-matter of human life, and all this according to God's law of formation or the law of creation."[3]

At length we come to the most subtle element of the Froebelian symbolism. A third requirement is essential in these gift play-materials. They must represent the cosmological development of the universe from out the original, undifferentiated unity, it must also give an objective picture of the unfolding of the divine spirit in humanity and in the individual human being, that is, of the development of the human mind. The child unfolds from the "unconscious rest in God" to consciousness, and from consciousness to self-consciousness, to attain which is the supreme effort of the "Divine effluence" in each individual. At the same time this is the aim of the education of the infant and also of the entire race. Froebel then believed that the best means of leading the child to self-consciousness is to give him a series of

[1] Froebel: Pedagogics of the Kindergarten, p. 32.
[2] *Ibid.*, p. 69.
[3] B. von Marenholtz-Buelow: Reminiscences of Friedrich Froebel. Translated by Mrs. Horace Mann. pp. 215.

playthings which will objectify to him the development of his own inner mental life: in other words, "a mirror" in which he can see, and feel, the same processes that are going on in his own development according to this law of contrasts, or analysis and synthesis.

With this review of Froebel's fundamental theses and principles it is possible to give them a juster evaluation.

His first presupposition is, that "the great abundance of these things which present themselves chaotically" to the child's "unpracticed senses makes the earliest work of the human soul a difficult one, and the impressions received are therefore indefinite and confused." This doctrine is still amongst us when we are told that the first consciousness of the infant is a "big, buzzing, blooming confusion." Whether this conception be true or false does not essentially concern us here. But it can be said that the facts of infant psychology, and the further testimony of neurology, would lead us to infer that the infant does not wake up suddenly from its unconscious sleep to find itself the confused victim of innumerable stimuli. The infant mind cannot be assumed to have the mental background for such a confusion to arise. Be this as it may, it must be contended, however, that Froebel has departed from his own best judgment, when he places between the child and nature a barrier, which hinders the child from coming into direct contact with those objects which are necessary for its mental development. The A. B. C. of objects, their properties of motion, weight, color, form, sound, and number, cannot be learned apart from the objects themselves. The perception of these properties is not cultivated by an abstract series like the Gifts and Occupations. The child must come face to face with nature in all its forms if it is to gain the sure foundation for its mental advancement. His senses can only be trained by free exercise upon the "manifold" objects of the animal, vegetable and inorganic worlds, as well as the phenomena of human civilization. Froebel, in spite of his theory, believed this and practiced it in all his schools and in the kindergarten. There is now evidence that this need for nature study, which has been so largely overlooked, is coming into prominence in kindergarten circles. A leader says: "Froebel's Gifts and Occupations, necessary as they are, can never wholly take the place of natural things, nor can they even be used in the kindergarten as the sole agents employed in a first course from which the children are to be graduated into nature study.

I value the Occupations and believe that, modified, they have their place. But before, and above these tools, I believe in Nature."[1]

[1] Proceedings of the National Educational Association. 1896, p. 510.

No bolder conception has been attempted in education than Froebel's effort to instill into the infant consciousness, from the first moments of life, by the symbolic method, a universal theory of cosmology. It was to be a royal road to learning. Froebel certainly did not believe that the infant could fully enter into all the meaning of the symbols. He knew that philosophy is an adult product that must come at the climax of education as its crown, and not at the beginning. But he did believe that "premonitions" of such a philosophy should be implanted in the childish mind by these symbols. "We must render perceptible to the child the unity of the world, absolute existence, the world within; and these in an earthly, human, childlike, intelligible fashion. Unity must be perceived in variety, absolute existence in phenomena, harmony in melody, the soul in the body—in a word, all things in all things—and this through many-sided harmonious active life and work. Such things we have to give to children through the system of ordered games and occupations which I have created."[1] It is scarcely necessary to discuss this proposition any further. Likewise the fantastical thought that the child requires an objective representation of his own mental growth cannot be taken seriously.

There remains, however, the original proposition that the materials to be presented to the child, as likewise to the matured intellect, should be arranged according to the logical principle of analysis and synthesis. After all this is the fundamental fact of the Gifts and Occupations, this is the vital principle. They grow, the one from the other, in a simple, logical manner. The ball represents the simplest object and from it easily and logically comes the sphere, from this the cylinder, from this the cube, and then all the other gifts in turn. These gifts are thus connected in a necessary way; they pass from the known to the unknown, from the simple to the complex, from the generic to the concrete, which accords with the basal laws of pedagogy. To attempt to refute these accepted principles of the operation of mental processes would be folly. It is, however, necessary to inquire whether the minds of infants from three to six years of age obey these same modes of mental activity.

In the first place, then, it may be stated that the analysis of the materials in the gifts from the solid to the surface, and from the surface to the line and point is a strictly formal and logical procedure. Similarly the process of synthesis through the Gifts and Occupations is a process which calls for the exercise of a purely logical connection of ideas. But the infant

[1] Froebel's Letters on the Kindergarten. Translated by Michaelis and Moore.

has no capacity for logical connections and distinctions. The power of logical and abstract thinking comes out late in the adolescent period, the gifts would antedate it by many years. The infant from three to six is in the sense stage; he must see, hear, feel, smell, taste, and touch the objects of his environment. He does not associate objects because of their logical connections but by their space and time relations. Again, the child of this age does not have sufficient power to abstract qualities from the objects in which they inhere. This assumes a vast advancement on their part, a stage in abstraction which they have clearly never reached. Infants do not learn the different colors apart from the things, nor number, nor form, nor any quality. But just here is the great error of the gifts; they teach these abstract conceptions apart from the objects in which the child most frequently observes them. This capacity for abstract thinking may safely be trusted to show itself in its own time and in its own way, but must not be stimulated too early.

There are two methods of choosing and arranging the materials, that are to be presented for the child's education, the logical and the psychological. The clearest example to show this distinction is drawing, although a common example is found in language. Logically, in drawing, the child must begin with the straight line; it is the simplest of all figures, and would thus seem to be easiest for the child. When he has drawn the first line, he must place "opposite" to it a second, like to the first, then will come the "connecting" link between them. The child is already on the fair road to Froebelian art. This is the logical method not only for drawing but also for sewing, building, and the other employments. But this is directly contrary to the psychological, or natural order. The first childish attempts at art result in mere indefinite markings; if any are straight, however, it is by an unhappy accident. From this scribbling stage the young artist passes to represent some object in his immediate environment, which has impressed him,—possibly it will be a man. An irregular curve will do service as the head, and two meandering lines will make a satisfactory body and limbs. Later he will correct these more and more as his ability increases. But so far as the logical method is concerned it may be pointed out that it demands the child to begin with the straight line which is purely impossible for the child for physiological reasons. This pregnant distinction has far reaching implications for all pedagogical presentation, and must be observed in selecting the activities for the infant's education.

The answers from the practical standpoint to the question whether the Gifts and Occupations convey to the children any

of their symbolic meaning, and whether they grasp any of the essential unity and logical connection, only expert testimony can decide. But, fortunately, the evidence, so far as it has been gathered, fully bears out the theoretical conclusions toward which our argument has led.

From a study of the replies of kindergartners to an extensive questionnaire issued by President G. Stanley Hall, one must conclude that there is still much confusion regarding the exact significance and value of the Frobelian symbolism. A few have arrived at a distinction between what one terms "lower symbolism" and the "representing and apprehending of a spiritual idea in a material form." The "lower symbolism" is nothing but the common childlike impulse of all children to make some inanimate object, as the ball, or the handle of a broom, do service as a "pony" or "bird." This symbolism, if such it may be called, can be illustrated by "thousands of instances." Every kindergartner is familiar enough with this trait of children. On the other hand the higher symbolism is regarded as entirely foreign to the child, and appeals only to the adult. This is the true Froebelian symbolism which would have the ball represent the original "Unity," "The multiplicity in Unity" and the inner life of the child. It is this abstract form of symbolism that leads one kindergartner to say, "the symbolic value sometimes ascribed to the kindergarten material amounts to superstition."

The mathematical and logical basis of the gifts and their analytic and synthetic character deserves a notice from the standpoint of the practical kindergartner. There exists the utmost unanimity among the 37 returns that in drafting a programme the "dominant interests of childhood" must in every way take precedence of the "logical use of the material." But there is yet a feeble majority who attribute some slight weight to logical considerations. The final opinion may be expressed in the reply of one: "Oh, dominant interests first, by all means. I cannot possibly use the material logically as I should, or as Froebel meant."

The agreement of practical opinion with our theoretical conclusions in condemning the "logical use of the materials" and the mathematical ends, is so marked that it is suprising to find that there is still a conflict regarding the value of the principle of analysis and synthesis. But kindergartners are very loath to acknowledge that no logical connections of materials can be appreciated by the infants, and that they are entirely useless, if not positively harmful. The only connections between the materials that are valuable are those that are wholly evident to the child, and these are merely the relations which the materials bear to the purpose for which he wishes to use them.

Extracts from these replies read thus: "The analysis and synthesis is suggestive to the teacher . . . but is nothing to be taught to the child;" It "is only valuable to the teacher;" "Is valuable educationally only to a very limited extent to the children;" "Great value for older people. It puts a soul into the material. I do not feel sure I know of a case where a child has appreciated the connection;" "Most positive educational value;" "Enables the child to discover himself;" "I think it has great educational value for both teacher and pupil, opening up a little world of evolution;" "Produces mental growth;" "Yes, it exerts a strong influence on the minds of children, making them logical and reasonable;" "Has educational value . . . develops thoroughness;" "For the children it is an unconscious education, to the kindergartner the process is a conscious one;" "Immense value, first, for teacher; she learns to think in an orderly way. It affects the pupils in the same way. Alas! Alas! I can do it so very incompletely."

What then is the result? The majority are convinced from practical experience that this analytical and synthetical process of the Gifts and Occupations is of value to the adult, and of none, or "very limited" value to the children. A minority, which must be acknowledged as vigorous, has decided that these logical processes do have importance for the children. But I do not believe it. "An unconscious education" of this kind is a mere subterfuge. We do not wish children to be "logical" and "reasonable." In fact all lovers of children must rejoice to hear from the kindergartner, who, as if in despair at her failure to transfer her own logical associations bodily to the children, cries out "Alas! Alas! I can do it so very incompletely."

It is impossible at this point to enter into a fuller discussion of the Gifts and Occupations. Many important inquiries must be left unanswered, while only a few can be taken up again in later sections. The real value of the gift building-blocks for the creative imagination of the child is beyond estimate and will be mentioned later. The inquiry into the modifications of size, shape, and the use of the gifts ought to be given a complete treatment, for it has implications at once hygienic, pedagogic, and psychological.

A final statement of our conclusions up to this point is a matter of special interest and difficulty. At least three things stand out as evident:

I. The Froebelian Gifts and Occupations as a coherent logical system, exemplifying the law of the connection of contrasts, or analysis and synthesis, is of no value whatever to the child.

II. The symbolic significance of the gifts, representing a monistic cosmology, the Unity in diversity, and multiplicity in Unity, is only a poor shift to give to adults a naïve philosophical system. It has absolutely no meaning for the little children from three to six years of age.

III. It may be added that a complete distinction must be made between the interests of the child and the adult, and this difference must be recognized by a distinction between the logical and the psychological method of selecting the kindergarten materials.

We now see that Froebel, a most masterly educational philosopher, has made some serious errors. He has taken the ball from the free play of the child to make it the prime symbol of his philosophical credo. It must be stripped of its colors and the burden of symbolic meaning, and returned to the child to romp and play with it freely in field, or street, in house or yard. Froebel seized it from play that it might become a medium of philosophical and scientific knowledge. The ball and the gifts ought not to be a curiously devised text-book of mystical laws, but playthings; not symbols disguising hidden truth, but the means for creation and construction. These playthings, therefore, fall apart for the child into so many unrelated and unconnected blocks and other materials, valuable and interesting only because they can be used for some childish activity which to the child is all important.

The Symbolism of the Games and Plays of the Kindergarten.

The New Education was ushered in with supreme emphasis on the parent as the natural and necessary educator. This fact, however, has been too largely overlooked in all but kindergarten circles. The dominant note commenced with Comenius who was the first in modern centuries to conceive of a "School of Infancy" in which the mother is the chief factor. His statement of the educative function of parenthood had little influence upon succeeding generations until taken up again in the great movement from which our own educational activity has sprung. In spite of his bitter denunciation of the unnatural indifference of parents, Rousseau felt obliged to assume that, "As the real nurse is the mother, the real preceptor is the father."[1] Pestalozzi, never knowing any but a mother's care, naturally concluded that with the mother rested the greatest force for the development of the youthful being. It was to his unfortunate "Book for Mothers" we owe the stimulus that aroused the slumbering interest of Friedrich Froebel to take

[1] Rousseau, Emile. p. 15.

up the mantle of his master and complete his message to his time and country.

The unaccountable absence of the slightest recognition of the all-important function of the parent from the current pedagogy of a generation ago called out the rebuking criticism of Herbert Spencer. "If by some strange chance," he proposes the argument, "not a vestige of us descended to the remote future save a pile of our school books or some college examination papers, we may imagine how puzzled an antiquary of the period would be on finding in them no indication that the learners were ever likely to be parents. 'This must have been the curriculum for their celibates,' we may fancy him concluding. 'I perceive here an elaborate peparation for many things . . . but I find no reference whatever to the bringing up of children. They could not have been so absurd as to omit all training for this gravest of responsibilities. Evidently, then, this was the school course of one of their monastic orders.'

"Seriously, is it not an astounding fact, that though on the treatment of offspring depend their lives or deaths, and their moral welfare or ruin, yet not a word of instruction on the treatment of offspring is ever given to those who will hereafter be parents."[1]

Such a criticism would hardly have been framed so hopelessly if the author had been acquainted with the German peasant educator, who some years previously had spent his later life in advocating and initiating the training of mothers and kindergartners, and had in this way set in motion a tide that has never ceased to rise. It is a phenomena of no slight peculiarity that this man who never knew a mother, whose childhood was depressed by neglect and lovelessness, who never felt the emotions of parenthood, should become the bearer of a new and higher conception of motherhood and parenthood. To Froebel education was a passion, and in his later years the education of the nursers of infancy was the master passion.

Every catholic conception of education, in its widest aspect as the evolution and progress of the human race, must have something to say regarding the best means of developing the instinct of parenthood. Too many fathers and mothers are grossly indifferent to the welfare of their offspring. Closely related to this is a problem of the greatest moment to the kindergarten. The kindergarten is responsible for furnishing with suitable and adequate equipment those parents whose sense of duty has been awakened to an earnest desire to do the best for their little children; to whom these little ones are not merely bodies to be gaudily clothed, housed and fed, but, more important by

[1] Spencer: Essays on Education, p. 264.

far, intellects to be nourished by human knowledge, and souls to be warmed by human association and affection. To help such parents was the prime motive of all Froebel efforts, and it is the chief object of the "Mutter und Kose Lieder."

It must be evident to any intelligent observer of kindergartners, or of those mothers who have felt its charm, that this crude volume, with its cras engravings, its rude poetry, and its fantastical symbolism, and utter lack of connection, has been nothing short of a revelation. The kindergarten "Bible," as it has been fondly termed, must be credited, to some extent, at least, with the inspiration which arouses that enthusiasm which turns the drudgery of teaching into a delight. One is led to inquire, however, whether a better result might not be gained by more systematic treatment of the work of child culture? Will not mothers respond more heartily to a rational interpretation of the intensely interesting phenomena of infant unfolding? It would seem that every intelligent parent must be more fully aroused to the transcendent importance of his task through the scientific literature on the development of infants which many of the best thinkers of our generation have produced. It is scarcely creditable that this great work of guiding mothers to read their own instinctive impulses toward unfolding the outbudding life of their little children must be handed over to the strained analogical and symbolical interpretations of Froebel. A passing stricture is also necessary upon many of the commentaries on the Mutter und Kose Lieder that have appeared in recent years. The naïve simplicity of the Froebelian thought has become the text for all manner of elaborations under the pretext of explaining and simplifying the original. It is past belief that one would venture to offer to earnest mothers, or kindergartners, who are seeking guidance in the practical training of their children, the esoteric phrases of a particular school of philosophy. There may be a coterie of adherents to these systems to whom the language bears some hidden or imagined meaning, but it certainly cannot do more than confuse and discourage the efforts of the intelligent mothers who have never been tutored in the tortuous paths of scholastic philosophy. The excursions, too, into every corner of heaven and earth to lasso together into a strained relationship numerous ideas on the basis of some insignificant analogical resemblance cannot efficiently assist mothers and kindergartners in training small children.

There has been an erroneous impression in the kindergarten that Froebel's Mutter und Kose Lieder was intended for children. There is no evidence either in the work itself or in the other writings of Froebel to lead to such a conclusion. It is primarily a work intended to furnish mothers with a knowledge

of the manner in which they may educate their infants and also to stimulate the nascent motherhood of all young women.

In this work Froebel emphasizes three predominant elements which enter into the training of kindergarten children. First, he lays more or less emphasis on sense training; secondly, he suggests the basis for the early motor development, and third, resulting from, and embracing these, comes the symbolic education, or the intellectual and moral education that is symbolically aroused by means of plays. These plays and games are the symbolic means by which the children are presented with the conceptions of home, society, church, and nature; on the moral side they are the germinal impulses of the moral sentiments.

The fundamental importance of sense impressions has received a large share of attention in all the general treatises on pedagogics. Its essential position in the psychology of education can never be too much reiterated. Since the accession of Herbartian pedagogical theories among American educators there has been a strong tendency to minimize the value of perception, or Anschauung, as Pestalozzi called it, in favor of the later doctrine of apperception. This Herbartian contribution to the undeveloped theory of Pestalozzi is of the utmost importance, but when the new doctrine throws sense perception into the background there can be no good result. Apperception itself rests upon sense perception both in the psychological genesis of knowledge and in the individual mental processes.

It is worth our while to pause here to get these facts into their proper relation, and it will be important to make clear that it is not to Herbart, but to Froebel that we must look for the statement of the primal relation of perception to apperception.

All our knowledge in the last analysis must have some radical connection with the simple perceptions that come through the different senses. The Herbartian pedagogy is the pedagogy of the youth and not of the infant; it assumes that there are already apperceptive centers in the mind to which the new facts of perception are to be related. But in assuming these "given" apperceptive centers, they obscure the great truth that these centers, so-called, or apperceptive masses, have grown up themselves in the mind of the child through a long process of time. The infant does not have these centers to start up his intellectual banking system, he must acquire them. In their genesis they are merely the outcome of previous sense impressions organized by the individual mind in its own peculiar way.

But what then is the method of apperceiving in the infant who has not the mental background to which he can assimilate

the new fact given by experience? Here the Herbartian theory gives the kindergartner little help. But just here Froebel is to the rescue with the true setting of both perception and apperception. He contends that it is through the motor functions aroused by imitation that the mind begins to react upon its environment in an apperceiving way. The apperceptive centers of the infant are, in a very real sense, found in the muscular and nerve reactions which the child makes in imitating any motor activity.

To clarify this truth let an example be given. Assume that a young child and a youth both have a visual perception of a bear for the first time in their history. The problem is, how will they each react to this new fact from the mental side? The youth has seen a large number of animals of many kinds; he has doubtless heard many stories about bears, has formed a vague mental image of some kind, an image compounded from the menagerie of animals that he has already seen; this youth may even have seen a picture of a bear, and heard a good description. He has a full panoply of mental processes to bring to this novel experience from his senses. But not so with the infant; his repertoire of animals has been confined to the horse, the dog, and the domestic cat. No stories, no images are ready in his mind to arrest the incoming experience. How does the child react? He has nothing to which he can relate this perception, but, on the contrary, has to form the centers which the boy already possesses. According to Froebel, the child would react either at once or when the time is ripe, by imitating the actions of a bear. He would walk on all-fours, crush his victim between his paws and generally carry out the activities he has observed. "Whatever the child imitates he is trying to understand." The only way the child can understand the bear is to reproduce in his own nervous and muscular mechanism the activities of the copy. His apperception is the muscular and nerve reaction.

Suppose this time it is a noise from some unknown source. The youth on hearing it links it with other similar or diverse sounds, as the case may be. To him it is like such a sound, or unlike that; his apperceptive centers for sounds of various kinds are developed. In the infant, provided he is not aroused to fear, the mental phenomena will be otherwise. For him the great thing will be to reproduce the sound and thus gain the reaction of his own muscular efforts and his own voice.

It remains to be said, however, that the Mutter und Kose Lieder represents in a most fragmentary way the thought of Froebel in regard to the training of the mind through sense perception. Likewise the educational value of motor training, which reached its high tide in the Froebelian Pedagogy, is

very inadequately and unsystematically represented in this work.

The symbolism of the games and plays of the kindergarten is a late acquisition to those American kindergartners who did not read the Mutter und Kose Lieder in the original German. But the recent translations and commentaries have diverted the kindergarten from the impress of the older enthusiasts who exalted the Gifts and Occupations. The greatest problem for the kindergarten to-day is, does this new emphasis, lately thrown with such remarkable eloquence upon the symbolical element of the games and plays, present the true line of advance for the education of kindergarten infants? To discuss this question two investigations are essential: first, an impartial examination of the Froebelian symbolism of these plays and games must be made; and secondly, a thorough reconstruction of the pedagogics of the kindergarten is necessary in conformity with the latest studies in psychology, pedagogy and the biological sciences.

A symbol, in the strict sense of the term, consists in representing some abstract mental conception by some actual object that is concrete to the senses. A flag is the symbol of the national unity; a lion is the symbol of strength; the eucharist is the symbol of the body and blood of the Lord. In this sense the fact is to be noted that all symbols are the product of the adult consciousness, never of the child consciousness, that has not advanced to clear abstract conceptions. To the child the lion is strong; but he has not abstracted the quality of strength from all the host of concrete things that are strong, and then made the lion stand as the emblem of the abstracted term, strength. The Froebelian symbolism is not of this simple nature. The key to it must be sought in his philosophical intuitions on the one hand and in his intense interest and study of human development on the other.

To bring the symbolical interpretations of the Mutter und Kose Lieder into a rational order is utterly impossible. Neither the games, which form the basis of the work, nor yet the lessons which they are presumed to give, have any sequence or connection. It is not important to write a detailed refutation of the symbolism of each individual play. For the purpose of criticism some grouping, however, is necessary. A classification may be made of those plays which are supposed to instill some intellectual lesson, and secondly, those which have, according to the Froebelians, an important value for the moral life of the child. The plays of the first division may be sub-divided into those classes which mirror to the infant his own inner life, and those which present to his mind symbolic representations of

nature, the family, social and industrial life, the State and the church.

In dealing with the plays that relate to family life Froebel pushes back from the individual factors, such as the father, mother and children, to bring into prominence the abstract relations in which they stand to one another. It is not the mere images of the father or mother, their actions, etc., but their paternal relation to the child and his filial relation to them that must be uppermost in the education of the child. This relation of dependency and need can best be brought home to the infant mind, according to Froebel, when objectively portrayed in a concrete way, as in such a game as the bird nestling over its young brood. Furthermore, the family must be seen by the child to be a unity of individual members and not a mere aggregate. Its relation to society and to humanity in general must be also symbolized in plays. Likewise in the portrayal of society and industrial life Froebel seeks to present to the infant's mind the higher social relations. In many of the games where we would expect him to bring out clearly the incalculable benefit of giving the children a fresh, first-hand view of the simple activities of the industrial world, he turns aside to some "inner excellence" which is not merely disappointing but exceedingly annoying. The main lesson in regard to the social life that Froebel sought to instill into the consciousness of the child is the unity and inner dependence of the race as a whole. The conception of the solidarity of the race as an organism and a unity of development was largely to the fore at the time of Froebel. His own mind was naturally responsive to this new race consciousness, and it is not strange that he used this conception in his educational theory. He would have the infant symbolically led to the consciousness that it too is a member of the race totality, and that he has a very vital role to play in fulfilling his individual obligations to the whole. This most important lesson which is to fit the child thus early to perform his share in human society is not difficult to instill. According to Froebel the child seeks nothing so much as a consciousness of this relation; his plays in the circle typify nothing but this desire of the infant mind.

Froebel's philosophy of nature has already been explained in connection with the Gifts and Occupations, which, as we have seen, furnish the dialectic scale upon which the universe was constructed. The same lesson is presented to the child in a symbolic way in the plays of the Mutter und Kose Lieder. He lays special stress on the unity of natural phenomena and on the casual connections of events.

So far as the moral value of these plays is concerned the symbolism is grossly fantastical throughout. The moral pre-

cepts or lessons are not gained from the interaction of the players, as in the case of the games that take place on the school ground. This crude, symbolical moralizing is not merely fantastical and far-fetched, it is equally unnatural and illogical. It is, withal, disintegrating rather than stimulating to the development of the mind of the child. To be constantly directed to some moral consideration from every fact is quite injurious to the mental and moral powers. In the case of these plays this is especially the case, for the child is not left to choose what facts or details of the play he shall attend to, but his attention is forced upon some feature which to him is entirely irrelevant and totally uninteresting.

But in all fairness it may be said that, while one may grant the propositions that have been urged, that the symbolism is fantastical, the moral lessons disintegrating to the spontaneity and the attention of the child, and, finally, that they are based upon the most insignificant features of the plays, yet it does not follow that Froebel's fundamental thesis is in the least disturbed. Froebel observed that many of the plays of the children and infants have a universal attraction for them, and that this enjoyment shows itself in the constant repetition of these games. Every baby loves the kicking game, hide-and-seek, bo-peep, and the long list of nursery games. This interest in these plays is perennial and wide-spread, and must be explained in some way. To Froebel these games stimulate or express certain moral feelings or intellectual awakenings which are of the most transcendent importance for the future of the child. The trouble has grown out of the fact that Froebel persisted in reading into the actions of the child playing these games his own mature philosophical conceptions. He was blind to the fact that there are nascent periods when certain moral and mental experiences arise which had previously no part in the life of the individual. He believed that in the infant in its early years are already active, in a vague way, at least, all the impulses and conceptions that are prominent in later life.

But to return to those songs and games that have for their purpose the stimulating of the intellectual comprehension of the inner connections or relations of natural objects, family life or society, merely a word more will be necessary. It has been pointed out in regard to the similar purpose of the Gifts and Occupations, that these conceptions of "Unity" and "inner connections," are extremely abstract conceptions, and belong only to the adult. Moreover, the child is totally incapable of grasping these abstracted relationships which Froebel thought so necessary for the life of the individual. The same reasoning applies with greater force to the symbolism of the plays. The conception of the family, for example, is far above the infant

mind. He may appreciate the concrete facts that he can observe about his mother, he may feel certain emotions toward her, but to grasp the relationship as the adult sees it is certainly not within his capacity. Again, to conceive the deeper relationship of the family and social organism is something which every adult with mature powers cannot do. Yet it is these "inner excellences" that Froebel would have typified to the child.

The problem of discussion is here; we believe just as firmly as Froebel that for the highest living the child must come to a knowledge of the abstract relations of the social organism, and of the unity of the phenomenal world; he must appreciate, if you will, a consistent philosophical basis for life and conduct; but we do not agree that the child in early infancy seeks a symbolical representation of these relations, or that there is in his mind the dim forebodings of the unity of the family, society, and nature. There is every reason to believe that Froebel was wrong in his endeavor to instill thus early into the mind of the child even by what may appear as harmless symbols the abstract, adult conceptions. For this reason we are firmly convinced that the kindergartners make a fatal mistake when they choose the games and plays to typify or symbolize the relations of the family life, human society, the State, the church, and the unification of the objective world.

Not alone is this symbolism now made the basis on which the games and plays are selected for the children, but it is likewise this evil feature that has been exploited so much in recent kindergarten literature to the great detriment of the kindergarten and the influence of Froebel.

But the question is still with us, what are the elements in the Froebelian symbolism that have given such wide currency and truth to its claims, or in other words, what is to be our safe guide in the choice, selection and ordering of the plays and games of these infants of the kindergarten?

Three main factors have entered into the formulation of the kindergarten symbolism. First there has been, on the part of Froebel and his followers, a misapprehension as to the function of traditional games. Secondly, there has resulted a fatal error from the total disregard of the psychological significance of what Miss Blow calls "infant analogizing." Lastly, the overlooking of the function of imitation as the guiding instinct in the mental and moral development of the infant at this period may fairly be counted the cause of most of the confusion.

Froebel and his later disciples have been led to the symbolism of the games and plays very largely from the fact that they have not sharply discriminated between the games and plays of children at different ages. This is natural enough at a time when the plays of every age during infancy and childhood were not

so closely studied as at present. This lack of discrimination has been shown by the contention of Froebel and all kindergarten writers that the greatest emphasis must be thrown on traditional games for the infants and not upon those purely imitative activities set agoing by the stimulation from the environment. The views are nowhere better expressed than by Miss Susan E. Blow in her work on Symbolic Education.[1] She writes: "Two distinct and even antagonistic views with regard to the purpose of the kindergarten games seems to be more or less clearly shaping themselves in the consciousness of practical kindergartners, and to be finding expression in the works of Froebel's interpreters and critics? Of these conflicting views one holds that the seed-thought of the Mother-Play is the dramatic reproduction of each child's daily experiences, and that therefore the plays suggested by Froebel must be changed whenever the circumstances and surroundings of the child are changed; the other insists that the procreant idea of Froebel's games is that of accentuating and interpreting pattern experiences, and that the actual supply of such experiences is an essential part of the duty of mothers and kindergartners." The best statement so far of the view that the child must reflect in imitative movements the environment is presented by Mr. Bowen in his work on "Froebel and Education through Self-Activity." Miss Blow, herself, as will be seen from her chapter on "Pattern Experiences," is the leading advocate of traditional or symbolic games and follows very closely the Froebelian cult as it is in his Mutter und Kose Lieder. We hold that there can be no middle ground in this controversy. The one party contends that the child must be presented with the higher conceptions of nature, humanity, God, and the family, with all their complex abstract relations; and this is to be accomplished by selecting certain "pattern" plays which the child must be taught. These pattern plays are the traditional games which have had such powerful influence in developing the Teutonic and Anglo-Saxon races. "The traditional games," Miss Blow informs us, "handed down from age to age, are truer than those of the individual child, because they image a wider life."

However, it has evidently not occurred to the advocates of this view to ask what games the kindergarten children do play, and what games they do not play, when left to choose and act spontaneously. It is this freedom of choice and action at this early age which must inevitably be the criterion of judgment on the kindergarten games. No principle is more intensely vital to kindergarten pedagogy. If is denied that the childish

[1] Blow: Symbolic Education, p. 167.

attention is to be trusted to select what is fundamentally nutritive for his mental and moral welfare, then nature and heredity are asserted to be radically false.

But there is ample inductive evidence to show that the kindergarten children, when left free to select their own activity, do not play traditional games, but show a marked tendency to reflect in an imitative way their environment. Miss Ginerva Sisson reports "a study of the free play of kindergarten children at recess and at noon reveals the fact that the traditional game does not appeal to them at that age. For a year careful observations were made in the city of Santa Cruz. No suggestions were made to the children. During this time the plays were almost entirely spontaneous. They asked for 'Hide and Seek' and played it once or twice, 'Blind Man's Buff' they played several times, 'Drop the Handkerchief' once or twice, but these are all of the traditional games in which they have shown any interest."

She gives as her conclusion from this study: "The kindergarten should not impose upon them from without the form of playing the game, but should let the children evolve it themselves." One reason "why some of the traditional plays fail to hold the young child is because they are out of his environment in space and time." In the same article she reports another series of observations made for the same purpose upon the children at the kindergarten of Leland Stanford, Jr., University, during one entire term. These observations "revealed but one traditional game in which those children indulged, and it was not played more than four times during the term."

She finally concludes: "What makes the little ones care so much more for the spontaneous than for the traditional game? What is it the spontaneous play possesses that the traditional game lacks? It is neither exercise nor the dramatic element. In none of these things does the charm of spontaneous play for the young children lie, but rather in the flexibility and in the relation to the environment of the child permitted where no set form is insisted upon."[1]

In her study of this same problem, Mrs. Burk says of the traditional game: "The traditional games played by the children were: London bridge, pom-pom-pull-away, ring around a rosy, drop the handkerchief, draw a bucket of water, 'booger' man, pussy wants a corner, tag, hide-and-seek, blind man's buff, goosey gander, and wood-tag.

"These games, when perchance they did occur, were introduced at the suggestion of one or two older children and met with very little response among the children in general.

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[1] Barnes: Studies in Education, pp. 171 *sq.* Genevra Sisson: Children's Plays.

"The appearance of the traditional games is quite insignificant compared with the representative and physical forms of play. This fact accords with the observations of Miss Sisson and of Luther Gulick. Gulick places the traditional game pre-eminently in the period from seven to twelve years. The sacred circle of kindergarten paraphernalia certainly does not seem to be based on any natural penchant of children of the kindergarten age for the traditional circle games, for these seldom appear in their undirected or undictated play."

"The kindergarten child is pre-eminently an individual rather than a social child. For a period covering four weeks, record was kept with specific reference to the question whether children played alone or in groups. About 51% of the plays were by individuals, about 26% were by groups of two or three, and about 23% were by larger groups."[1]

There can remain no doubt that the traditional games are foreign and alien to the interests of infants at this age and that Froebel and his disciples have made a mistake in carrying down to this infantile stage of mental development the plays that appeal to children at a later period. The feelings, to which the traditional games minister, of co-operation, rivalry, the struggle for victory, are all missing in the finer forms that appear in the regular traditional performances, and contests. To force these upon the kindergarten child is not to prepare him the sooner to understand these feelings but to render him mechanical and slavish to the dictation of others. He is not yet prepared to enter into these complicated movements and feelings, but requires a long course of training in simpler activities and movements so as to prepare him more fully to understand his environment. We have been accustomed to drag into our guage of the infant mind our own adult conceptions, and do not realize the profound fact that the infant from three to six is almost totally a stranger to all the simplest natural objects of the world about him. Moreover, we do not understand that it demands a long time for him to attain the simplest facts, and that when he does grasp one simple fact it may arouse in him feelings of pleasure and happiness which place him in another world from ourselves. We can no longer form a conception of the delight with which a child at this age enters into his simple horse play. The kindergartners must therefore be extremely watchful that they do not give to children plays above their interests, and thus rob them of their own delightful spontaneous games, and the greater value of their own initiative.

The symbolism of the kindergarten in the form of poetical

[1] Burk: A Study of the Kindergarten Problem. Mrs. C. F. Burk: Play, pp. 49.

analogizing has been, without doubt, the most sadly disintegrating to the extreme plasticity of the infant mind. One cannot read the characterization of "The Kindergarten Child" by Miss Carter in the Atlantic Monthly for March, 1899, without feeling depressed at the injury the kindergarten symbolism is working. It is a question whether Miss Carter portrays a condition which is abnormal, but it is certain that this accords in every way with the psychological views and methods of all the literature of the kindergarten symbolism. With regard to the evil results of what Miss Blow calls "infant analogizing," she says:

"It was in the nature work and object lessons that our enthusiasm over the kindergarten-trained child received the blow from which it never recovered. . . . . Our curriculum included lessons on plants and minerals. We gave out three leaves to each child for a comparison of shapes.

'Children, what have you on your desks?' we asked.

'I have three little boats,' cried Freddie.

'I have three fans,' said Agnes.

'I have a papa, and a mamma, and a baby,' said Ethel.

'I have three plates for the "Three Bears,"' said Harold.

'I ain't got nothin' but three ole leaves,' announced Pat. He, by the way, was so unfortunate as to have missed the kindergarten.

"Another time we gave out pieces of flint for the lesson on minerals.

'Children, what have you on your desks?' we asked pleasantly.

'I have a snowball,' said Freddie.

'I have a little white mouse,' cried Agnes.

'I have a lump of sugar,' declared Ethel.

'I jist got a ole stone,' cried Pat.

'How many of you have lumps of sugar?' asked we. At the suggestion, all of them had, except Pat."

Flowers were called fairy cradles, chairs, houses, hats, etc. Seeds were called baby plants, marbles, etc.

"Nor was this all. Every flower or plant enjoyed ethical characteristics. Some were 'good,' some 'bad,' most were 'pure' or 'noble.' All except the bad ones had been especially created for the use and delectation of mankind in general, and good little children in particular."

She finally remarks: "We therefore set ourselves to work to discover to what extent this training had been accomplished. After much patient observation we came to the conclusion that their imaginations had not been trained at all, but that their suggestibility had been developed to such a pitch that most of the kindergarten children were in a state of half hallucination

all the time; that in trying to reach the imagination Miss Bessie had been merely injuring the ability to have clear and precise sense impressions."

"Infant analogizing," as it is termed, presents three distinct phases which the kindergartners have confused as the same mental activity in every case. First come those cases of error from the wrong apperception on the part of the child; secondly, those cases where the child employs some anthropomorphic conception to explain a strange and occult phenomenon; and, lastly, the simple cases where, for example, the child plays with a stick and calls it his 'pony.'

Errors of apperception are a frequent occurrence in childhood when he is mastering his objective environment. From Professor William James the following cases are cited: "Every new experience must be disposed of under some old head. The great point is to find the head which has to be least altered to take it in. Certain Polynesian natives, seeing horses for the first time, called them pigs, that being the nearest head. My child of two played for a week with the first orange that was given him, calling it a 'ball.' He called the first whole eggs he saw 'potatoes,' having been accustomed to see his 'eggs' broken into a glass, and his potatoes without the skin. A folding pocket-corkscrew he unhesitatingly called 'bad scissors.'" (James: Psychology, Vol. II, p. 110).

It would be a serious mistake, as we saw in the cases given by Miss Carter above, to train the children still further in this error of apperceiving under the guise of training the imagination. These frequent errors, made by all children in early infancy, are not due to any mental function which must be cultivated. They are due to lack of knowledge and experience, and not to any special peculiarity of the infant imagination. The infant expects a certain reaction from the object similar to what he has already experienced, and he, himself, reacts before he has learned to make the needful distinction between the new object and his old experience, or "head."

This error in apperceiving is an activity entirely distinct from the anthropomorphic conceptions which every child forms of the more hidden phenomena of nature. Thunder, for example, is to all children an occult and mysterious thing, and to explain it the child must conform to his own mental experience. It is to him, "God groaning, or kicking, or rolling barrels about, grinding snow, walking loud, etc." Lightning is "God putting out his finger, opening a door, turning a gas quick, or striking many matches at once." This phase of analogizing is entirely legitimate on the part of the child, and has an important bearing in the training of the imagination. The child seeks some adequate explanation for these strange phenomena, and can

only appreciate such anthropomorphic conceptions, for his experience is exceedingly limited.

The third phase of "infant analogizing" must be considered more at length.

To see our way clearly after coming through this tangle of misconceptions it is necessary for us to find some new standpoint from which we can interpret the plays of children according to the facts of psychology. Moreover this standpoint must be sought not in the adult experience, as Froebel has done, but by a fresh and careful review of the genetic development of the mind of the infant at this stage. It is the Copernican advance over again; we must seek the center of pedagogics in the child and not in ourselves.

The mind of the child is composed predominantly of perceptions of motions, and of voluntary motor images, and of activities set off by the imitative instinct. This hypothesis, that the consciousness of the infant at this stage is made up exceptionally, or in a large degree, of motor images and responses, is borne out by the great resemblance of children to animals. The animal consciousness must be notably a motor consciousness, and their perceptions of dynamic qualities, so far as visualization is concerned, is much in advance of the perception of static qualities. "It is an established fact, as has been said," writes Carl Groos, "that among animals motion is more provocative of attention than anything else. Further, it is evident, that imitative impulse is more easily awakened by movement than any attribute of a body at rest." (Play of Animals, p. 222.)

But it is needless to draw on the comparative facts from animal psychology and biological science further than to preface the discussion. There is abundant evidence in the psychology of infancy to justify the thesis of the predominant motor consciousness.

First of all, the perception of motions of objects by the child is far in advance of his power to distinguish the colors and forms of these objects. Dr. Tracy found that the perception of motions follows the perception of brightness. This power "to follow with the eyes a bright, moving object," has been observed in one child on the 23d day, and in others as early as the second week. "But most observers have noticed this activity first about the fifth week, some as late as the sixth or seventh." But anyway, long before the infant in arms is capable of perceiving colors or of abstracting forms, he has a great capacity for observing motions of the objects of his environment. On this point Preyer shows that the perception and discrimination of colors is weak and late in development. "In regard to their color-sense, all children who have not had special training in this direction show great uncertainty up to

the end of the second year, and even in the third year they often waver in judgment to such a degree that they might be supposed to be color blind." (Infant Mind, p. 13.)

That the perception of motions of the objects within the environment comes thus early would show that it is fundamental. This is not alone true in the individual, but it is equally or to a greater degree true of the biological series where it is of the greatest importance for the evolution of life. This dynamical aspect of consciousness is likewise a most prominent factor in the development of the race in all its phases. An unexpected corroboration of the conclusion that in the race experience and in that of the individual as well, the tendency to perceive motions of objects before their forms, is gained from a study of language. On this point a quotation from Dr. Tracy[1] may be at length. "In other words," he says, "the child of two years has made nearly twice as much progress in learning the use of verbs as in learning the use of nouns; . . . a comparison of the adjectives and adverbs in the two tables justifies a similar conclusion in favor of the adverb. To my mind this fact which, so far as I know, has been hitherto overlooked by all writers on child language . . . . possesses great value for philology and pedagogy as well as for psychology. In the first place it supports the view that the acquisition of language in the individual and in the race proceeds by similar stages and along similar lines. Max Müller says that the primitive Sanscrit roots of the Indo-Germanic languages all represent actions and not objects; that in the race the earliest ideas to assume such strength and vividness as to break out beyond the limits of gesture and clothe themselves in words are ideas of movement, activity. We have found, from the examination of the vocabularies of these twenty-five children, that the ideas which are of greatest importance in the infant mind, and so clothe themselves most frequently (relatively), in words, are the ideas of ACTIONS and not OBJECTS, of DOING instead of BEING. The child learns to use ACTION-WORDS (verbs) more readily than OBJECT-WORDS (nouns); and words descriptive of actions (adverbs) more readily than words descriptive of objects (adjectives)."

The mere fact of the physical growth and the incessant activities of the child at these youthful infant years would suggest to us the same conclusion. The kindergarten age, and it must be insisted upon that this period is a distinct stage of development, is an acknowledged period of very rapid growth of the muscular, and of the nervous tissues as well. It is the time when those sections of the brain cortex connected with motor

[1] Tracy: Psychology of Childhood, p. 82.

functions are making their most rapid development, and when the other parts, with the exception of the sense centers, are relatively undeveloped. But the growth and functioning of these organs depends wholly upon their exercise and use by the child. This predominance, then, of motor activities resulting from the movement of the children themselves as well as the perception of the motions of objects, must inevitably result in furnishing the child a large content of motor or kinetic images. As Professor Baldwin[1] says: "The point is this: the child's personality grows, growth is always by action; he clothes upon himself the scenes of his life and acts them out so; he grows in what he is, what he understands, and what he is able to perform."

It is now a common place in psychology that every mental state has a tendency to pass over into some motor form. What would be more natural than that the child which has a marked tendency to attend to the activities going on about it, should also tend to reproduce these mental images in its own organism in an imitative way? The function and use of this imitative instinct is nowhere better stated than in "The Play of Animals" by Carl Groos, (p. 183.) He says: "I took the ground that it is an instinct which works directly toward the developing of intelligence, since its tendency is to render many other instincts to a certain degree superfluous, and so encourage independence in the individual. This view is borne out by the fact that imitation is the strongest in the more intelligent animals, such as highly developed birds and monkeys, and that man may be called the imitative animal par excellence."

"The actual biological significance of imitative play is not expressed in movements or sounds that are unconnected with the struggle for life, but rather, to put it briefly, in playful self-discipline of young animals in the life habits of their kind.[2]

Professor Baldwin, in the work already referred to above, has well shown that through the imitative instinct there springs up in the child the feeling of personality, and that through imitation only, we can explain the spontaneity and originality and also the early development of the will of the child.

Once accept this dynamic or kinetic characteristic of the infant mind, which is known as the motor type of imagination when it is prominent in the adult, and the psychology and pedagogy of the kindergarten become clearer. This gives a sufficient account of the animistic tendencies of the child; it explains his early attempts at drawing, and furnishes a cue to

[1] Baldwin: Mental Development, p. 36.
[2] *Ibid*, 190.

his delight in stories. Moreover, it explains clearly the imagination of the child which has attracted so much attention, and furnishes us with an adequate view of his make-believes and many of the so-called analogies.

The imagination of the child is different from that of the adult in two chief features. The adult pays more attention to images of form, coloring, and setting; the dynamic element is no longer foremost, except in the purer motor types. In the child this kinetic characteristic is the chief thing; coloring and form are merely secondary. Then, again, there is every reason to believe that the images in the mind of the child are more intense than those of the adult, partly because they are fewer in number, and these are most intimately connected with direct memory images of the particular object, or objects.

It has been customary to write about the imagination of the child as something remarkable and vastly superior to that of the adult, not alone in its vividness but also in its range. An example of this tendency, marked as it is in all the literature of the kindergarten, may be taken from Mme. Necker de Saussure quoted in Symbolic Education. "Mould a lump of wax into a figure or cut one out of paper, and . . . it will be a man in the eyes of the child. The child does not see the imperfect copy, but only the model in his own mind. The wax figure is to him only a symbol on which he does not dwell. . . . Too exact imitations of things undergo the fate of the things themselves, of which the child soon tires. He admires them, is delighted with them, but his imagination is impeded by the exactness of their forms, which represent one thing only; and how is he to be contented with one amusement? A toy soldier fully equipped is only a soldier; it cannot represent his father or any other personage. It would seem as if the young mind felt its originality more strongly when, . . . it puts all things in requisition, and sees in everything around, the instruments of its pleasure. A stool turned over is a boat, a carriage; set on its legs it becomes a horse or a table; a bandbox becomes a house, a cupboard, a wagon—anything." From this language and such similar expressions about the plays and make-believe of children, one would conclude that the 'stool' actually appeared to the child's senses as a carriage or a boat, or at least, that there was an image of the boat present in the mind of the child through the symbol it has chosen. "The simple symbol," we are informed by Miss Blow, "is the product of the unconscious mind, and is the result of the same activity which makes the child ride his stick and call it a horse, or carry it and call himself a sailor." Does the child think, see, or image the stick as a horse? That would certainly be a feat of the imagination.

But in all these examples it must be noticed that these objects are only the means, or tools, by which the child can himself perform some action, by which he is helped to imitate some activity which he has witnessed. He no more makes the stick he rides into an imaginary horse than we make the knife and fork with which we eat into a digestive process. He, himself, by his own legs, is carrying out the movements of the horse, and the stick merely aids in his own activity. All these playthings are only so many accessories which are brought in to help out the child's own activities. They are no more symbols to the child than his spoon is the symbol of a digestive process. The child's own imitative activities are everything. The fact that children forsake a beautiful Parisian doll for a crude makeshift, does not in any way prove "The too perfect toy chills the imagination and hence the child turns from it to objects which by remotely suggesting an ideal heightens the activity of fantasy." The children turn to the "shabby boot-jack," or even to the cucumber, as Professor James relates, or to the bundle of rags tied at the waist, because they are freer to handle these and to torment them in a motherly way as they choose. The child feels all these perfect qualities to be unessential, and all he demands is that he be left room for his own activity with the doll.

From this dynamic view of the imagination of the child we can now see very plainly that the Froebelians have made an egregious error. They have concluded that the stick the child rides is for him the symbol of a horse, or that the chair takes a new form at every changing attitude. But they fail to see that the child is, himself, in a very real sense the horse, and the stick and the chair are merely the means which assist him to act the part t .e better. An example of this error on the part of the kindergartners can readily be found. "So, too, it is, through the creeping, swimming, and climbing motions that he identifies the cat, the fish, and the squirrel with his ball. His stick stands for trees, lamp-posts, and soldiers through the qualities of straightness, and his many fingers on one hand suggest the merging of the father, mother, and children in the union of the family." We have here that form of the Froebelian symbolism which Miss Carter found so demoralizing to her efforts. The child should by no means be taught to call the ball a "cat," "a fish," or, indeed, any object whatever; he should never be taught to identify the stick with a tree, a lamp-post, or soldier "through the quality of straightness," for these do not call out any motor activity from himself, and that is the only justification there can be for the use of the materials of play. If anything must represent the lamp-post, or the sol-

dier, it must be the child, and only the child, that should be used to represent these objects.

This leads to a further very pernicious evil in many kindergartens. Many kindergarten teachers instruct their children to act in their play as sheep, or cows, or some other animal, whose characteristic activities and movements the children have never actually witnessed. Sometimes a small model is shown the child, from which he only receives the lamest and crudest conception of the cow or sheep, and nothing, whatever, of its actions and movements. And yet the child is then asked to imitate the activities of these things which he has never seen. Some one has suggested that there have been cases where the kindergartners have taught the children to represent farmers when they have themselves never seen the operations of farm life, and the children have never had the faintest conceptions beyond city streets and their traffic. Such instruction leads the infant to form the impression, as President Hall found among some Boston children, that the cow is of a blue color, and about two inches in height.

In concluding this review and criticism of the Froebelian philosophy of the kindergarten, with all due respect and charity, we feel compelled to point out that kindergartners, generally, are unduly carried away by this doctrine. It is, indeed, safe to say that there is no philosophical system to-day which counts so many unswerving devotees as the crude and puerile attempts of father Froebel. He set himself zealously to promote the training of women for the profession of maternity, and he has succeeded in this respect beyond his fondest hopes. The kindergarten teachers, the large majority of whom are completely untrained in philosophical thought, as it has developed from the ancient Greeks, accept religiously the philosophical and symbolical basis of Froebel, and cling to it with all the tenacity of the female intellect. Shortly before his death Froebel said he would be satisfied if his principles of educating little children are recognized within 300 years. It would seem that if the kindergartners persist in their conservatism there is every probability that the spirit of Froebel's utterances may be smothered beneath the letter of his methods for even a longer era.

There can, of course, be no objection whatever against the noble women who find satisfaction and help in the naïve metaphysics and sociology of Froebel. The symbolism of the gifts and games which objectify these philosophical conceptions may also be excusable when confined to these adult minds, for which Froebel devised it even more than for the little children. But many kindergartners have deluded themselves that the conceptions demanded for their own mental life are also suitable for the children. Accordingly, the unity and logical connections of the

gifts and the plays symbolizing the unity and relation of the family, State, church, society, and nature are everywhere forced upon the child. Many will acknowledge, indeed, that it is an "unconscious" process, a method of "premonitions" awakened into definite knowledge, but they have nowhere shown just what these premonitions are. However this may be, we know not, but we are convinced that it is totally contrary to the real spirit of Froebel, which is for freedom and not dictation.

The Reconstruction of the Kindergarten.

That the Froebelian Pedagogy, as he has himself expounded it, and as it has passed into the literature of the kindergarten, is not always worthy of confidence, and is in many respects out of harmony with modern conceptions of child nature, must now be evident. The right, therefore, of the kindergartners to seek from every source the facts which contribute to a clearer knowledge of their task in educating infants ought to be conceded. The new Pedagogy of the Kindergarten, if it is to have a scientific basis, must take into consideration the contributions of Comenius and Pestalozzi, and the other infant school reformers. It must likewise look for its principles and its *raison d'être* in the facts of biology, physiology, and genetic psychology, in so far as these outline the stages and the course of the natural development of the infant between the nursery and the school period.

The history of infant education reveals more or less distinctly two ideals of culture for early years. On the one hand is, what may best be designated, the school ideal, and on the other, is the ideal of the nursery. The first is seen in the infant schools previous to the rise of the kindergarten, and the latter to a large extent is exemplified in the Pestalozzi-Froebel Haus of Berlin. The first ideal maintains that the child must thus early be trained in formal culture to prepare him for the later work of the school and eventually for social functioning in the intellectual, moral and industrial world. It controls the mind of the child *ab extra*, without regard to his native interests. The nursery ideal makes its chief aim the development of the child in all his inherent interests and instincts through free and spontaneous activity.

It is now generally accepted that the spontaneous activities of children at this period have an incalculable significance for their normal, and healthy development. Children from the age of three to six are too young for the systematic discipline of routine school life. The function of education at this period must be, whether in the home or the kindergarten, to foster and gradually unfold, through wise stimulation, those instinctive activities and interests which make for the complete develop-

ment of the individual at this stage, with the maximum of freedom and the minimum of necessary disciplinary control, consonant with obedience. To give this in a more concrete way, the kindergarten must permit the children to become healthy animals first of all. Froebel believed that it must be the function of the kindergarten to emphasize the child's free activities and instincts. In outlining his first kindergarten he points to the fact that when the infants come from the home they have already attained certain habits and directions for their activities, and these the teacher has no right to overlook. At this stage the teacher must recognize these powers of the child already present and must develop them still further.

The activities of infants which Froebel has made the basis of his pedagogy are drawn directly from his inductions from a study of children. He carefully observed the activities, emotions, growth, and expressions of children so far as he had opportunity. But after all is said in his praise as a student of childhood, his knowledge was the result of chance observations and lacked definiteness, and detail, and was burdened and obscured by his interpretation in the light of his own adult conceptions of symbolism and philosophy. Yet it is just this false monstrosity of the Froebelian child that the kindergartners have set themselves up to educate with the symbolism of the kindergarten.

It may be acknowledged that we are still in gross ignorance of the normal development of children at this period of life. The period of early infancy has been carefully studied by Preyer, Darwin and many others, and the periods subsequent to the kindergarten have been more or less sufficiently studied, but the children from three to six have never been carefully observed. However, there is some data from which we are able to project inductively the basis for the pedagogy of the kindergarten. This theory must naturally find its basis in a study of the instinctive activities and interests which arise so powerfully at this period of infant life. For the manner and succession in which these spontaneous activities manifest themselves, we must refer the reader to what meager literature there exists. We can only record these activities and interests and point out their value for development.

I. Language, Gesture and Expression.

From his study, Dr. Tracy concludes that the capacity for the acquisition of language is inherited, but its perfection depends on use and exercise. It begins early in the language of gestures and vocal cries. The infant commences to use words in the third half year of life, and during the years from three to six very rapid progress is made in acquiring and

using words and simple sentences. Children take a supreme delight in exercising their newly won power of expressing their ideas; they are fond of talking constantly with their parents, teachers, and other friendly adults, and playmates. An important factor is the habit many children have of conversing with toys, dolls, and animals with which they play.

All writers on this early period have emphasized the value of this instinct for acquiring languages and words. The kindergarten must furnish training and exercise for this instinct. It is very necessary that all the children have an opportunity to express themselves in their plays, in repeating stories, and in general conversation on topics in which they are vitally interested.

There seems to be no good reason why at this period when the children are so capable of mastering new words, they should not be given foreign languages as well as their own. The ease with which young children, who have been given the opportunity, have acquired German and French as well as English, shows that it is very possible. It would lighten the later acquisition of these languages enormously. Some have objected that this would result only in the children confusing the different tongues and in the end attaining no proficiency in any; they prefer that the children learn their mother tongue as perfectly as possible, and this cannot be done when confused with foreign languages. But this objection is not entirely valid. Children at this age are not capable of mastering any language, even their mother-tongue, very perfectly. Almost every one can point to some child who has acquired two tongues in a way as perfect as other children acquire one at this early age. The writer knows a number of children below six who speak English, French, and German, equally well, and they are not behind other children in the use of their mother-tongue. Moreover, these children are from quite normal parentage, not above the average in intelligence.[1]

II. Curiosity, or the Instinct for Knowledge.

So much attention has been given to the symbolical plays of infants in the kindergarten that the necessity for the observation of the natural and other objects of the environment of the child has been too largely overlooked. The inquisitiveness of young children has marked this stage as *par excellence*, the "questioning age." Infants from three to six are intensely interested in all the objects about them, and they do not by any means spend their entire time in play; they have their periods of serious practical interest in discovering new facts.

[1] *Vide*, also German Kindergarten, Minneapolis, Minn.

The distructiveness of infants is in part an expression of this instinctive search for knowledge.

The cultivation of this instinctive curiosity to see, hear, handle, and to secure the maximum number of sensations from any and every object, is of the most vital importance. Without this primary interest the play instincts would be almost entirely lacking in stimulus, if, indeed, it could be aroused at all. This inquisitiveness is naturally the vital factor in later scientific interest. Spencer says: "Whoever has watched, with any discernment, the wide-eyed gaze of the infant at surrounding objects knows very well that education does begin thus early, whether we intend it or not; and that these fingerings and suckings of everything it can lay hold of, these open-mouthed listenings to every sound are the first steps in the series which ends in the discovery of unseen planets, etc., . . . This activity of the faculties from the very first being spontaneous and inevitable, the question is, whether we shall supply in due variety, the materials on which they may exercise themselves; and to the question so put, none but an affirmative answer can be given.[1] Professor Morgan says in this connection: "Herein, then, lies the utility of the restlessness, the exuberant activity, the varied playfulness, the prying curiosity, the inquisitiveness, the vigorous and healthy experimentalism of the young. These afford the raw material upon which intelligence exercises its power of selection. Observers of human life have not failed to contrast this youthful expansiveness ready to try all, dare all, and to do all, with the narrower and more restricted, if more concentrated efforts of those in whom the stern lessons of experience have checked so much that is picturesquely impossible. And this exuberant expansiveness of the young is a biological and psychological fact of profound significance."[2]

III. The Play Instincts.

Readers of kindergarten literature are well aware of the profound importance of play for the education of the young. The kindergarten has always based its philosophy upon this fact. It is not essential, therefore, to discuss its general utility, but only to point out its biological function and those forms of play which are dominant at this period of infancy.

Three views have been current regarding the biological function of play. Schiller, followed by Spencer, explain play as a result of a superabundance of nervous energy. To furnish this overplus of energy a means of escape, the young go

[1] Education, p. 282.
[2] Habit and Instinct, p. 163.

through various sportive activities which resemble the serious activities of life. The impulse is awakened into action by the tendency to imitate the activities observed. Directly opposed to this hypothesis is one not so widespread. The explanation it offers is that play affords recreation and the restoration of depleted energies. When the mind is nigh exhaustion relief may be obtained by indulgence in active plays which ease the nervous tension. Professor Groos offers a further theory. He finds play activities to be instinctive; they are anticipatory of the serious activities of the adult life. "The animals do not play because they are young, but they have their youth because they must play." (Play of Animals, p. 76.) Without this instinct for play "the adult animal would be poorly equipped for the tasks of his life. He would have less than the requisite amount of practice in running and leaping, in springing on his prey, in seizing and strangling his victim, in fleeing his enemies, in fighting his opponents." *Ibid.*

A. Physiological or Motor Plays. The purely motor activities of infants are the most primitive form of play, and are based upon the physical needs of the child. The movements that appear in the period of later infancy are creeping, running, marching, walking, dancing, jumping, hopping, skipping, climbing, swinging, throwing, kicking, clapping, rolling, flying, etc. (For a complete list, *vide* A Study of the Kindergarten Problem, p. 42.)

It may be of interest to give a table from the returns to the syllabus of President G. Stanley Hall. The singular uniformity of opinion regarding the physical adaptedness of these motions is noteworthy.

	Harder.	Easier.	Earlier.	Later.	Liked.	Not Liked
Clapping,	0	28	22	0	16	0
Rolling Ball,	1	24	21	0	13	0
Running,	3	21	18	2	8	0
Flying,	11	13	10	9	9	0
Marching,	16	7	6	9	7	0
Skipping,	19	4	3	12	9	1
Finger Movements,	20	0	0	11	4	2

B. Hunting and Wandering Instincts. These are well known to all observers of children at this early age, and they must have some value and significance for development. It is not essential that they be indulged to excess or that they be allowed a savage expression, but hunting and hiding, the chasing of other children, insects, and animals, and also the impulse to wander about on excursions ought to be indulged in a harmless way. The excursions into the country where it is possible for the little ones to follow insects, and animals, and where they may indulge in pursuit and collecting will be very beneficial, as well as the

milder games of hide-and-seek, and all those make-believe games of savagery and hunting.

C. Imitative Plays. Without committing assent to any of the psychological explanations of imitative processes, it will be readily agreed by all that there is certainly no type of play activities so indispensable for mental evolution in the race or individual. Groos says, "Die Nachahmung ist der Vermittlerin zwischen Instinct und Vernunfthandlung." (Spiele der Menschen, p. 360.) Imitation, however defined, is the cause of many acts which would otherwise have to be instinctive, and it is the means by which many activities with strong instinctive basis are set into motion. It is this capacity in human nature that makes for intelligence.

We are most concerned with imitation as the basis for those dramatic games and plays which, as we have seen, give rise to the kindergarten symbolism. It is therefore of prime importance to know beyond dispute just what objects are most imitated by children of this age, and what characteristics of these objects have most attraction for the infant mind.

Miss Frear has shown that during the second year the child breaks away from a slavish repetition of the actual copy to make his own adaptations. He begins to imitate the idea of the object as it suits his purpose and environment. At the beginning of the third year the imitation of the actual thing, or copy, directly, has fallen to about 30% of the total imitative acts, and the imitation of the idea has risen in the same time to nearly 70%. Professor Baldwin draws attention to these adaptations made by children in their dramatic games, and points to them as the very essence of originality.

Children from 1 to 12 imitate the adult human being, other children, and also animals. The imitation of other children and animals never rises above 15% of the whole at any age; the imitations of adult human beings never falls below 80%, except slightly, for a short time about the 7th year. These results are the best scientific data available. They may be trusted to establish in a general way the conclusion that the chief thing for imitation is the imitation of the motor activities, and the most frequent copy which the child selects is the adult human being. This must have an important bearing in selecting games and in directing the activities of infants during the kindergarten age; it negatives many of the absurd imitative acts which the teacher dictates to the children, where they copy animals and inanimate objects in a perfunctory manner.

D. Constructive Plays. The building, or constructive instinct, is one of the most spontaneous of all the play activities of young children at this period of life. Groos has said that it is "a particular expression of the general delight in causa-

tion." It was for the satisfaction of this instinctive play that Froebel elaborated his gifts, and their value must be measured wholly upon their suitability to meet this need. The duty assumed by the kindergarten is to furnish the proper materials with which the child can express his thought in a constructive way. These materials must not be selected to harmonize with some system of philosophical speculation; they are not to be symbols of an ontological theory, nor the outcome of a logical sequence at once artificial and abstract, nor are they to be designed to instruct the child in any special qualities, as form, size, number, or density, nor to construct involved geometrical figures. In so far as their pedagogical value is concerned, their first duty must be to minister to the instinctive impulse of the child to create something in which he is interested. Judged by this standard, the gifts are very inadequate; they are too small in size, and too limited in the number of pieces.

E. Agricultural Plays. The interest all normal children take in primitive agriculture is too well known to require extended treatment. All kindergartners find digging in the sand and earth and the handling of clay a pursuit which affords children constant and unclouded pleasure. Froebel recognized gardening as the one indispensable part of the kindergarten. Planting of seeds, observation of growth in shoots, stalks, buds and fruit, the gathering and storing of harvest are the veritable "mystery of mysteries" to the childish mind. Gardening affords exercise to the body in a manner least fatiguing and most instructive and pleasurable. It gives mental images and conceptions which open for the future all the beauties of literature. Anthropologists agree that these agricultural activities have been a momentous factor in producing the higher development of the race. May it not be that this interest of the infant nourishes some unseen roots of his nature of the widest importance?

F. Improvised Plays. There seems to be a type of plays in which most children engage which cannot be directly connected with any of those hitherto discussed. They may have some relation to the imitative plays where it is the "idea" rather than the direct activity that is reproduced by the child, and at the same time they are connected with the petting and care of animals. The doll plays may be the best example. From a study of dolls made by President Hall it would appear that while related to imitation, along with this it "must include some elements of the widespread animism, if not fetishism of children and savages."

The authors say this is not merely a girl's play. "That boys are naturally fond of dolls and should play with dolls as well as girls, there is abundant indication." In closing this instructive

paper the question is judiciously asked: "Would not dolls and their furnishings be among the best things to make in manual training schools; and why are dolls, which represent the most original and spontaneous expression of the play instinct, so commonly excluded from the kindergarten where they could aid in teaching almost anything?" The doll play is freely used in the Pestalozzi-Froebel Haus, and is creeping into the best kindergartens in America. The use of the doll to represent the baby would be infinitely more psychological than the cube or many of the impossible and absurd symbols thus employed.

IV. Artistic and Æsthetic Interests.

The artistic awakenings of children begin to make themselves active in a remarkable way during this kindergarten age. These interests center in drawing, painting, music, looking at pictures, clay-modeling, paper-cutting, and many other simple forms of childish activity which are set off more or less by the imitative impulse. The chief thing noticeable in all these well-known performances is that they are as yet rather a means of expressing thought on the part of the individual, and not directly an attempt to produce the beautiful. We are still quite ignorant regarding the order in which these phenomena arise in the life of infants, and we cannot tell definitely under what conditions their development will be facilitated, and give rise to the higher habits of taste and æsthetic sentiments which are evolved out of them.

V. Social Instincts.

The kindergarten has always recognized the need that exists in every normal child for association with his fellows. Comenius recommends its worth in arousing and sharpening the intellect. Froebel early recognized its deeper significance for the moral nurture. Investigations demonstrate that the desire for social intercourse is inborn in the child and appears early.

It has been asserted by some students of the kindergarten that "the play activities of children at this stage are almost wholly individualistic, their interests are individualistic, and not until a much later period of their development should we consistently look for that unity of purpose and action of which the circle is the symbol." (Burk: Study of the Kindergarten Problem, p. 37.) Dr. Luther Gulick arrived at the same conclusion that the "plays of early childhood are individualistic, non-competitive, and for the accomplishment and observation of objective results." (Pop. Sc. Mo., 98.)

Against this conclusion Miss Sisson found in her study that when wholly free, kindergarten children do form into groups to co-operate in play under the leadership of some child who,

stronger than the others, naturally assumed this role. The weight of authority from other sources and common observation seems to warrant the deduction that children do seek at this age, the companionship of their equals to play, and give vent to social feelings. It is doubtless a fact that many of the plays of the early days of infancy are mainly individualistic, but these are likely to diminish rapidly from the time the child is able to walk, to talk and to take a new interest in what others are doing. By the time the child is four or five he is ready to enter many plays of co-operation with a few, at least, of his fellows; such plays as horse, bear, train, doctor, etc. It is quite out of question for thirty or forty, or even fifteen or twenty to take part in a spontaneous game such as the kindergarten circle calls for. The most of the kindergarten games require only a limited number of children to play the chief parts while the others act as spectators, or stand about as wooden blocks representing "trees," or such like artificial things; these games are false to the real life of children, and have no justification whatever. The truth is, most probably, that only two or three, or at most five infants can profitably and naturally play together at this age with any degree of spontaneity and naïvete.

VI. Acquisition and Ownership.

It has been recognized by students of childhood and psychologists that the collecting passion is an early form of the instinct of property and possession. Dr. Kline, who has studied this activity, decided that "property getting in childhood is instinctive, an activity not to be suppressed or thwarted." The nature of the objects collected depends almost wholly upon its environment. "The intrinsic value of the article plays no role, but collect it will, and must." Froebel noticed that infants, as soon as they can walk, begin to gather pebbles, bits of paper, pieces of board, twigs, straws, and other articles. He recommended this as an activity to be encouraged, not so much for its value in fixing habits of acquisition, but since it leads to a later scientific interest and observation.

VII. The Number Interest.

There are few questions in infant education that have received so great attention as that of the time and manner of introducing the child to number work. We are interested here in knowing at what age the majority of children begin to count over the number series, and show an interest in the primitive arithmetical operations. From an inductive study of this problem Professor Phillips concludes that number comes from the idea of

a series, and is not primarily dependent on objects; the series idea is aroused by the succession of sensations either of touch, or from the circulation, breathing, or rhythmic sounds, clock strokes, etc. "That this series idea is the first step, and that it becomes quite abstract, will appear evident when all the facts are co-ordinated. Long before there is any conscious idea of number, children delight in reproducing or following a series of any kind."

"The early period at which children learn to count is very significant. They learn to name the series and follow it before they learn letters, to read or to write. Out of 1,100 persons, 90% are sure they learned to count first." From this we may infer that the kindergarten has a good opportunity of developing the interest in numbers which arises thus early.

VIII. Story Interest.

The children's love of stories has been a theme of importance from the time of Plato. Stories enrich the imagination and the feelings, and emancipate them from the domination of the senses. The problem of vital import for the kindergarten is no longer of the value of stories in general, but of the practical use of stories which will be suitable to the mental level of the infant. We are quite in the dark regarding the kind of stories fitted for each particular age.

Taking these as the representative activities which are to be observed in all normal children of kindergarten age, we have a basis for an inductive pedagogical theory for the kindergarten. All these activities play a greater or less part in the expression and development of the infant, and if they are encouraged, it leads to the evolution of the individual upward to the fuller consciousness and the higher stages of life. By allowing these instinctive interests their normal growth we are giving nature that chance to produce under the proper environment the complete adult product for which she has endowed the individual with all these spontaneous awakenings of the mental and psychic nature. We are conforming our training to the natural unfolding of the tender plants within the kindergarten. It must be said that these activities are not to be regarded as so many separate and distinct expressions of the young organism, but they are interwoven in the most complicated manner in the everyday life of the child. We do not know that there is any special order in which one follows the other or evolves from it, and we are quite ignorant of their individul values. But forming, as they do, the typical expressions of the whole complex organism at this stage we have every right to analyze them out and make them the basis of a pedagogical theory.

The advantage of assuming that these are the natural highways for the education of the infant is that we have a foundation that is true to the inherent interests of the child himself. The aim is therefore found in the child, and not in some standard we set up for him. We are not imposing *ab extra* actions and interests that are foreign to his life, and which are only logical to the adult consciousness, but those which are the outcome of the inherited accumulation of the ancestral predispositions, and have all the momentum of the race behind them. With a firm confidence in the inherited racial tendencies we must also recognize that the child is capable of much modification by the environment in which he displays these native tendencies. His development is the result, on the one hand, of his own spontaneous expressions, and on the other of the environment which tends, naturally, to inhibit some and to intensify others of these activities.

If the fundamental thesis that the child has within himself all the complex possibilities for his complete development be accepted, and the expression of these spontaneous activities is dependent on the environment, then the question, *par excellence*, for the kindergarten is the question of what will constitute the best environment. The basal contention of Rousseau Pestalozzi, and Froebel is summed up in that they believed every child will develop, as a tree, by the very push up of nature if he is given the proper environment for the expression of his outpouring energies. It has always been a matter of note for centuries that it is these years of kindergarten life when the child is most active in getting his first orientation in the outside world of nature and society. This is the period in which all those distinctively human activities, which have made for the advancement of the race of mankind over the animals, show themselves most powerfully.

The first fundamental requirement which the healthy development of the childish organism makes upon its environment is that it affords him adequate opportunity for play in the open air. Upon no class in modern civilization does the increasing movement toward density of urban life fall with such blighting effect as upon the young. Considered first as a matter of inheritance, or predisposition, the infant, and, even more, the child, demands the advantages of more or less space upon mother earth. For centuries of time, in which the human race has been perfecting, it has dwelt in the open air, under the open sky, with little protection and with endless possibilities on every side. We have every right to accept, within reasonable limitations, that the child repeats the stages of the development of the race in its fundamental instincts and interests. If, therefore, the race has found its natural evolution entirely apart from the urban con-

ditions, which are the product of very recent centuries, it must, likewise, be true that the infancy of the individual is naturally predisposed to flourish most advantageously where there is abundant opportunity for free, undictated play in the open air under the light and sunshine of heaven.

The physiological needs of the growing organism especially point to the baneful effects of city life upon young children. None of the activities of later infancy are more profoundly beneficial than the simple actions of running, walking, dancing, jumping, climbing, swimming, throwing the ball and all such simple movements of the fundamental muscles which begin to function at this time of life. These movements bring into activity the trunk muscles which, next to the brain itself, are growing rapidly, they fill the lungs with pure, fresh air, stimulate the heart, and thus set into rapid motion the circulation of the blood. The increased nutrition which results from this acceleration, day by day, has an incalculable value in building up the infant body, and prepares for those more subtle developments which are possible only when a strong foundation has been laid. It is these activities which in this way prepare the organism against the infantile diseases, and generally prepare for the robust blossoming of a full and complete intellectual life. It is a singular fact that this most Froebelian of all the teaching of the founder of the kindergarten has received least attention. The enormous cultivation of the virtues of the gifts and the occult symbolism of the games has resulted in making the kindergarten sedentary, or, at least, has confined it within doors, and thus restricted the spontaneous activities of the children in the open air. This tendency has certainly no justification whatever, either in the teachings or the practice of Froebel, and much less in the hygienic requirements of the child.

It is a well known fact that Froebel constantly played with his children in the open air. Frau Marenholz-Buelow and many others have borne witness to this; he himself asserted it, and the great Diesterweg found him thus playing with the children upon the hills not far from Liebenstein. It is still customary for the kindergarten at Blankenburg to pass through the streets of the village to the old "Spiel Platz," which was the favorite spot for Froebel and his children to gather for their games and sports.

The importance of developing the open air games and plays cannot be too strongly urged. Froebel instituted the kindergarten in the country village where it was natural for the children to live in the open air. He never conceived that what he regarded as the most fundamental condition of the environment should be almost totally ignored. The fetish worship of the gifts has been most largely to blame for this mistake. It cannot

be pleaded that the practical exigencies of city life have been the entire factor in the total neglect of out-door plays, for even in the country towns and villages Froebel's example has not been followed, nor his insistent admonitions heeded. There can be no reason whatever why a large number of the games and plays should not take place in the public parks. Roof gardens might be within reach of the energetic, or as President Hall has suggested, "Next to out of doors, the kindergarten, at least in winter, might be on the top floor under a roof wide open to light, where some of the health provisions of hospitals are seen." (Forum, January, 1900.)

The second fundamental condition which the kindergarten must present for the activities of childhood is that he have unlimited opportunity for observation and contact with the objective world. An effort must be made, as Froebel shows by excursions, to afford children an enlarged environment of all such natural and artificial objects as will attract their attention and interest. The kindergarten age is above all the ripe time for sense development; it is the period for receiving lasting images through eye, ear, muscles, and other senses. "Take your little children by the hand," advises Froebel, "go with them into Nature as into the house of God. Allow the wee one to stroke the good cow's forehead, and run about among the fowl, and play at the edge of the wood. Make companions for your boys and girls of the trees and the banks and the pasture land." (Education of Man, p. 184.)

The demand for perception of natural objects plays a part in all the writings of Froebel as remarkable as the disregard which is paid to it by the kindergartners of the present day. It is the more phenomenal that Froebel, living in the country, thought it so necessary emphatically to reiterate the need of sensuous contact with natural things. This fact has been insufficiently recognized in the kindergartens of the larger cities where more than anywhere the children are total strangers to the most commonplace objects. From the "Contents of Children's Minds on Entering School" we take these examples of childish ignorance. Of the bee-hive 80% were ignorant; crow, 77%; squirrel, 63%; sheep, 54%; frog, 50%; growing wheat, 92.5%; growing rose, 54%; island, 87.5%; woods, 53.5%; river, 48%; hill, 28%; plough, 64%; spade, 62%; hoe, 61%.

The importance of these sense images becomes more apparent when we recall that they are the basis at once for all the future knowledge of the child, and at the present stage of development they are the indispensable stimuli for the plays in which the child is likely to indulge. Among the spontaneous plays of the infant, by our analysis, we must place the imitative plays as the most valuable; for through them the child

prepares for the future activities of the adult, and by them he enters into and understands the adult life, and also exercises his own originality. It is indispensable that the child have direct perceptions of the copies he is to imitate. One of the most dangerous errors of the kindergarten springs from the oversight of this simple fact that the child can alone imitate intelligently, those activities of which he has a vivid mental image. The common practice of teaching the children to imitate the actions of animals, and also the primitive human activities, which he has never observed for himself, cannot be too strongly condemned. For example, the child is taught to imitate the pigeon, or the sheep, or the bird nestling over its young, or the blacksmith, or Hiawatha, when he has no more idea of these and their characteristics than of the categories of Aristotle.

The imitative plays, and these are the symbolic plays in the only true sense, are dependent on the proper sensuous stimulus; without this stimulus from the senses there can be no reflex arc so far as children of an early age are concerned, and consequently there is no reaction imitatively, and thus no spontaneous, naïve play. If the kindergarten would encourage imitative plays, it must bring the child into direct contact with the objects of nature which offer the stimuli, and also the primitive activities of mankind.

Furthermore, these must all be observed in their natural environment, as far as possible. It is not sufficient that the child see toy sheep four inches high, or the picture of the bird brooding over its young; object lessons of this kind are dead and lack the life characteristics which make them interesting to children. Froebel said, "the boys should see the animals and the plants in their life, as it were; they should observe them in their natural abodes, some basking in the sun and drinking in light and warmth, others hiding in darkness and shade, seeking coolness and moisture." (Education of Man, p. 311.)

It is just these life characteristics, these common movements and uses of animals and objects which attract children most, and form the center of vital interest for the young observer. The perception and the interest in the static qualities of color, form, density, parts and structures are very secondary and do not enter the child's concept until later. The failure to recognize this fact leads the advocates of object lessons and nature study into error. They have proceeded to give the child those details and features which to them are non-essential and have no vital claim to his attention and memory. He wants to see and know how the animal moves, eats, and what his use may be.

Binet studied his two children, one from 4 to 5 and the other

2½ to 3½, to discover how they perceived and represented the objects with which they were familiar. He reports, "We examined the responses of the two little girls. It is almost never a question of the visible aspect of the objects. The responses bear almost entirely upon the uses of the object. Bread is for eating; a knife is for cutting; a chair is for sitting upon; a table is for putting the lamps or the books on. This mode of representation is never the effect of caprice or fantasy, since one finds it in the interrogations separated by an interval of over seven months and it is common to both children. This shows us with what eyes these two children look upon the external world; they are utilitarian above everything; one speaks to them of bread, they are not arrested by the form or the color; bread gives them especially the memory image of something which they carry to the mouth and eat; bread is for eating." He concludes that as a general rule "the child is invariably attentive to the usages of objects." Professor Earle Barnes has studied this question in older children and reaches substantially the same conclusion. (Binet: Perceptions d' Enfants, Revue Philosophique, December, 1890.)

It is a stricking fact in human experience, that the advocates of any truth may, in practice, be exemplifying the corresponding error. The Protestant revival could assert the freedom of conscience and yet result in the persecution of its opponents; the Puritans may flee oppression in one land to become its instruments in another; the political doctrines of one party may lead to a government upon opposite principles. So it may be in education; humanism in Italy may become a worse scholasticism in Germany; the spontaneity of Froebel may be in actual practice the domination of the adult. At all events, this principle, upon which the kindergarten theory was so strongly entrenched, is almost totally disregarded in real kindergarten practice. In the ordinary kindergarten, there is first of all, a programme for the week, day, and season. This is formulated by the adult, adapted to adult needs, and grows out of the adult conceptions of order and connection. The entire work of the day is directed by the standard set by the adult. The kindergartner regulates the length of time for this play and for that; she selects the order of the daily occupations, she controls the movements of the children down to the minutest details, she even goes so far to the absurdity of a fantastical and puerile regulation of the manner in which the boxes containing the gift building blocks must be handled. First, the box must be placed directly and squarely before the child, upon the lines of the table; then it is reversed, finally by some stereotyped juggling the lid is withdrawn, and in breathless expectancy and wonder, the box is slowly lifted, and

behold! the amazing spectacle of the cube in all its profundity of meaning lies open to the infant gaze. This minute regulation to the most trivial details, for the sake of symbolism, is termed the spontaneity of free play.

Contrast with this state of affairs, if you will, the daily round of a well regulated nursery. The child is not bound in any way by an imposed programme; now it is this play and now it is that. He is not oppressed with a sense of unfitness; the seasons are not the regulator of his interests; he may play farmer in winter as well as in summer; he may be a builder at any season; he may brood over his nestlings with as much unction in the fall as in the spring. His interests tell him when it is time to take up some new activity, and tell him what it shall be. There are no absurd and trite orders in which he shall take up his blocks, or put them away. His own growing sense will direct him, quite regardless of the marvellous truth of the unity, diversity and connection.

Contrast, too, the manner of the free spontaneous play of the superior nursery with the artificiality and unnaturalness of the kindergarten play. In the one case the interest of the children select the game, the appropriate actions, the order, the essential movements and the conclusions. It is graceful, marked by sustained attention, and exhibits that one quality which more than any other is characteristic of all true, pure childish make-believe, naïveté, the artlessness of unconscious dramatic instinct. In the kindergarten the plays are mechanical, and forced; they exhibit little real spontaneity, little of childlike unconsciousness, nothing of naïveté. The play is usually suggested in the first instance by the kindergartner, and each actor is rehearsed by constant dictation into his role, while the majority of the children remain as mere spectators, or as "wooden posts" or "trees" or some such like object which they would never dream of imitating, and all the while anxious to be chosen to play a part before the others that they may also have a turn to "show off."

Moreover the very principles of the kindergarten are against all this incessant domination of the infant's interests by those of the adult, and show that it is not educative but mechanizing. These regulations of each successive movement deprives the children of initiative, and robs him of the opportunity for originality. The kindergarten sets the model and the child follows the copy, as best he can, often succeeding only after repeated aid from the directress. If, however, we inquire why all this care on the part of the trainer, we are informed that we cannot understand; the child must play, and the kindergarten exists to teach him to play. No greater error could flourish. The truth is that children could rather teach the adult how to

play. They have always played, and they will always play, so long as materials and freedom are granted to them. The plays of the kindergarten are not play but intricate gymnastics. It is as impossible to teach the children to play as it is to teach a young robin when and where to build his nest. The first great requisite in both these cases is to afford natural activity and interest a chance to find their expression, and to furnish the materials necessary for this end. Without doubt children will find the appropriate mode of action. "Therefore, education in instruction and training, originally and in its first principles, should necessarily be *passive*, *following* (only guarding and protecting) *not prescriptive*, *categorical*, *interfering*." (Italics Froebel's.)

Thus far it would appear that the mother and kindergartners have little part in the environmental forces acting upon the infant organism. From the last section the reader may assume that this vital factor is to be rashly neglected; but the purpose was to bring out in full relief the fundamental proposition that the adult must follow the development of the infant and not restrain it by the imposition of *ab extra* standards. The relation of the adult to the infant is all important, but it is so because it is the most subtle and powerful influence which makes its impress upon the child's life at this period of extreme plasticity. The relation of the mother, for the kindergartner only temporarily stand in *loco matris*, may be threefold: it is a relation of love and sympathy, of intellectual sympathy in the mental interests of the child, and lastly it is a governmental relation. With this comes also the primary duty of providing food, clothing and home life.

It is an astonishing fact that some of the fundamental facts of the widest biological and ethical import are comparatively overlooked by pedagogics. We are ready to urge the need of social orientation to discuss the necessity of discipline and its desired results, but few lines have been devoted to the vital fact that no infant can flourish normally who has not that emotional *rapport* with his parents, which we call love. The extreme difficulty of definite knowledge of the childish emotions at this early age may account for this neglect; but when we consider the close relationship between child and mother, on the physical and psychical sides, we may be sure of this as a growing factor in the development of character. When we recall that in later years, and especially in the storms and stresses of adolescence, the ethical power of filial affection is frequently the dominant motive against evil, then we begin to glimpse the immense strength of this emotional factor.

That love is an essential need of the child we can judge from the fact that children in infant homes, although under the same

regimen of diet and discipline as in well-ordered homes, do not make the substantial progress of home-bred children. Oppenheim says: "Even in infancy one can plainly notice this fact. These little creatures look, act, and really are far otherwise than the ordinary baby in good surroundings. Their want of mental, as well as physical activity, is so plainly apparent as to be visible even to non-professional observers. From such a source comes the remark that 'institutional babies are tolerably lethargic.' They are lethargic because their vitality has been sapped away, and one might, with equal truth, say that institutional babies are tolerably withered. Even more striking is a fact that can be vouched for by any physician who has had experience in hospital wards for babies. Such patients languish in institutions although their food and care are fairly good. . . . The reason is not hard to find out. The gist of the matter is that the care of a baby is not meant to be arranged on a wholesale plan. He needs personal attention, and without it his body withers." (Development of the Child, p. 246.)

Associated with and second only in importance to this emotional *rapport* between mother and child must come intellectual sympathy. We have already seen for the development of the mental life of the child freedom of expression is a most imperative necessity. The relation of the adult to this development must be that of sympathetic appreciation; from time to time this appreciation or intellectual sympathy will pass over into wise suggestion, and only in rare cases of positive need will active discipline and command intervene. The possibilities of utilizing the intellectual sympathy of the adult to encourage the young is well stated by Spencer. "What can be more manifest than the desire of children for intellectual sympathy? Mark how the infant on your knee thrusts into your face the toy it holds that you too may look at it. See when it makes a creak with its wet finger on the table how it turns and looks at you; does it again, and again looks at you; thus saying as clearly as it can, 'Hear this new sound.' Watch how the elder children come into the room exclaiming, 'Mamma, see what a curious thing,' 'Mamma, look at this,' 'Mamma, look at that:' and would continue the habit did not the silly mamma tell them not to tease her. Observe how, when out with the nurse maid, each little one runs up to her with the new flower it has gathered, to show her how pretty it is, and to get her also to say it is pretty."

Among the numerous other conditions which go to make up the ideal environment for the most complete life of the kindergarten infant must be those that minister to the primary physical needs. The kindergarten does a most positive harm when it does not afford these infants every opportunity for frequent

nourishment and for sleep. These are absolutely essential for health, and still the kindergarten keeps these children for hours in active exertion with no chance whatever for recuperation and food. There are other requisites also which are important but cannot be treated at present.

From the study of the human organism at this period of development in relation to its environment to my personal judgment but one conclusion is apparently inevitable; the kindergarten must furnish the public nursery for children at this age. The total disappearance of gardens from connection with homes, the ever increasing tendency to greater and greater density of population, the consequent diminution and disappearance of lawns, and play-grounds, the diminished facilities for nurseries owing to crowded tenements and the expense of spacious rooms, the inability of most parents to furnish the best nursery conditions, all lead to this conclusion that the kindergarten must act as the public nursery. Moreover, the social needs of the child himself, and the demands that his introduction to the larger life of the world be at first wholly under the direction of the mother, or mother-spirit, give us the same result; the common nursery, or kindergarten, for children from two or three to six, must compensate for the loss of the private nursery which the present social conditions have rendered impractical. This mothers' club house must furnish means for all kinds of plays in the open air, and facilities for gardening. It must be equipped with a building amply furnished as a nursery; it must afford opportunity for eating, sleeping and cleanliness. It must supply rooms for the plays when the weather is unfavorable, and where the children and mother can play together when they wish. Such an institution would give the best opportunity for training nurses and kindergartners, and also young mothers, and this was the very ideal of Froebel, for which he strove in his later days.

It has appeared advisable to treat the philosophical basis of the kindergarten more in detail and to leave the problems of technique, practice, and hygiene for a later discussion. A brief outline of some of these questions may be set down.

No consensus of opinion has been reached regarding the stories which are suitable for kindergarten children. An effort must be made to know more definitely what are the stories best adapted for this age and what characteristics are most demanded by the children themselves. Myths, fairy tales, mother goose rhymes, fables and folk-lore should all be drawn upon. Emphasis has lately been thrown upon the true stories from every-day life, also special experiences as parties, excursions, etc., simple descriptions of objects and events which appeal to the imagination. Comenius strongly advocated humorous stories

for this period; certainly this is a field much neglected in kindergarten. Uncle Remus, Humpty Dumpty, and Brownie stories should find a place.

The stories for kindergarten infants require to be extremely simple; they must train the weak imagination and mind to associate details and to knit up the various parts into a whole. Words expressive of action, movement and indispensable characteristics. Names come next in importance, appearances of objects, place of action, and time, have all a part to play, but are not to be too prominent. There are some things which the child does not demand, and in these he differs from the adult. Sequence, order, likelihood, proportionate development and balance are quite indifferent to him. The stories told by children themselves at this age do not exhibit much if any feeling or æsthetic details. The proverbial moral appendage which adults drag in for children is quite absurd from the child's standpoint.

Stories should lend themselves to the development of language and expression. They should be capable of dramatization. Parts also should be easily drawn and the whole should be readily held in mind so that the child can retell it. This whole matter of stories presents a wide field of investigation for practical kindergartners.

It is high time the orthodox Froebelian drawing were abandoned. The temptation to have the children draw regular figures or geometrical figures can only be for the purpose of showing off. Childhood, like greatness, is never exact. The child should choose his own subject in drawing as in any other mode of expression. Usually he begins with the figure of a man. At intervals slight suggestions for improvement can be made; but they should always remain merely suggestions. Progress and development will come of themselves. An attempt will be made later to develop from the actual drawings of children the subjects and laws of progress in the normal child.

It is of the greatest value to know what departures into new lines have been made in the lines of play materials and what the result has been. This subject ought to be treated in detail. Among the more common of the new materials, are peg boards, tiles, stringing buttons, painting, use of chalk and colored crayons, plaiting daisies and leaves into wreaths, clay, soap bubbles, straw weaving, cranberry stringing, and sand. Dolls and toys of various kinds are finding a place slowly by the side of the older materials. In California more out-door games have been introduced; somersaults, wrestling, rolling hoops, climbing, swinging, see-saw, etc. These are of great value in strengthening and developing the muscles. Of the dramatic games there is a wide field. The children, it seems to me, must here be left to choose for themselves; the plays

should be largely performed by twos or threes, and never in the crowd. The environment must be a determining factor. But among the more universal are doll plays, washing dishes, clothes, ironing, sweeping, etc.

Music, other æsthetic occupations and nature studies will also suggest many problems for discussion later.

The questions of hygiene are the most vital to the kindergarten and have been most neglected. The kindergarten receives the children at a critical for stage developmental neuroses and hereditary lesions, and general susceptibility to disease. The organism is plastic above all else.

Building equipment, lighting, heating, ventilation, and cleaning are all of prime importance. The absence of dust must be imperative where children are playing so much. Personal cleanliness demands constant vigilance. Enough care is not taken to avoid straining of the muscles of the eye; in fact, too much use of the eyes is forced by the work. Nervousness from the continued excitement of the crowd is too great for many little ones; almost every one acquainted with kindergartens can point to some child who has had to be withdrawn or is laboring under nervousness from the kindergarten. All the causes of the nerve strain must be inquired into. Finally, more attention must be given by kindergartners to the law of the development from fundamental to accessory in the nervous and muscular system. In spite of all that has been said, the work is frequently too fine and too taxing to certain muscles.

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LITERATURE.

The Secondary School System of Germany. FREDERIC E. BOLTON. New York, 1900.

Dr. Bolton has divided his work into six chapters, which deal with (1) general organization and management of German secondary schools, (2) teachers, (3) movements toward reform in course of study, (4) present course of study, (5) secondary and higher education of women, (6) conclusions. The book is enriched with numerous statistical tables and with a brief and well selected bibliography of the subject. As compared with Russell's "German Higher Schools," it is noticeable that Dr. Bolton devotes less of his space to a history of the higher schools and to a consideration of the subjects of the curriculum in order to discuss thoroughly the administration of schools and the problems thereby suggested. The two books are complimentary, both are necessary to an understanding of the subject. The general reader will find the two last chapters of great interest and value.

Dr. Bolton has greatly increased the usefulness of his book by keeping the American teacher and the American school continually in mind; his previous experience as high school principal has enabled him to translate the German system into American terms. His estimate of the German system is remarkably sane, he recognizes its strength without falling into extravagant eulogy; the work contains a vigorous protest against the current depreciation of American high schools.

The last chapter contains an excellent criticism of the modern German standpoint in higher pedagogy. "Education has been discussed too much from the logical and religious-moral standpoints, efforts to experimentally determine methods of procedure, capabilities of pupils, educational values, means towards ends and many other educational problems susceptible of experimental study have received little attention at the hands of either psychologists or pedagogues. . . . . In many cases German pedagogy is based upon traditions and hypotheses rather than on principles evolved from experiences."

The Training of Teachers for Secondary Schools. JAMES E. RUSSELL. Proceedings of the W. E. A., 1899.

Prof. Russell opens his paper with a brief summary of existing conditions in the secondary teaching profession. The college graduate now has but a slight advantage in gaining admission to a secondary school. The specialist and the normal school graduate who have succeeded the collegian have been tested and the popular verdict is that they too are poor craftsmen. The only hope of the ambitious collegian is to put himself distinctively above his competitors in his chosen field. But what is the ideal preparation for such teachers? Present conditions seem to me to indicate four qualities pre-eminently desired in the teacher: (1) general knowledge, (2) professional knowledge, (3) special knowledge, and (4) skill in teaching. The first requisite is covered by A. B. degree. In the field of general professional preparation, the secondary teacher needs to know the psychology of the adolescent period and the standards of culture which have prevailed in the past and now exist among various peoples. Information

gained from the study of school economy, school hygiene and management of schools and school systems at home and abroad should be included under this head. Special knowledge is an absolute necessity in the qualifications for secondary teaching, without it the teacher becomes a slave to manuals and text books; his work degenerates into formal routine with no life, no spirit, no educative power, because he knows no better way. Technical skill in teaching is essential in a secondary school because it requires an arrangement and presentation of the subject matter of instruction in a way unknown in elementary education and unheeded in most college teaching.

The Economic Aspect of Teachers' Salaries. CHARLES BARTLETT DYKE. Columbia University Contributions to Philosophy, Psychology and Education. Vol. VII, No. 2. New York, 1899.

Prof. Dyke divides his monograph into two sections, the first, devoted to the economic aspect of teachers' salaries contains chapters on (1) the economics of teachers' salaries, (2) the teacher's salary and workingman's wage compared, (3) American and European salaries, (4) why teachers' salaries are low, and (5) the improvement of teachers' salaries. The second section treats of public school maintenance. Prof. Dykes quotes numerous tables showing the rise in teachers' salaries during the last thirty years, but he likewise demonstrates that the average teacher's wage is considerably below the earnings of the ordinary employee in manufacturing establishments. Compared with teachers' salaries in Europe the facts are still more striking, while American working men receive much higher wages than their European contemporaries, the American teacher obtains for her services a sum absolutely smaller than the English and German teacher, and is on parity with French teacher. This does not take into consideration the smaller cost of living in Europe. This unfortunate condition of affairs is due, in Prof. Dyke's opinion, to tradition, sentiment, public ignorance, public indifference, the inefficiency of the teaching force and their sex. As remedies, the author suggests increased efficiency on the part of the teachers and the development of a teacher's trades union. The monograph is enriched with numerous tables and charts, which enable the student to base his conclusions on fact rather than on hypothesis, as heretofore. In calling the attention of the public to the unfortunate condition of the teaching profession in this country, and in suggesting the factors involved in the problem, Prof. Dyke has performed a distinct service of no small value. The study gives evidence of careful research.

Salaries of Teachers. JOHN B. CLARK, Columbia University Quarterly, Vol. I, p. 3, March, 1899.

In this study of the economic principles underlying teachers' salaries, Prof. Clark enumerates the factors which prevent teachers from receiving the wages which their ability would command in other occupations; they are (1) the relative agreeableness afforded by the intellectual pleasure of presenting scientific truth to young minds and the opportunities offered in the higher schools for scientific investigation, (2) the intermittent character of the work with its holidays, vacations and free hours, and (3) the comparatively small risk incurred in becoming a teacher. These causes will always become operative to a certain extent. "A teacher can always be had for a certain number of dollars 'and other good and valuable considerations;' while in other professions, men of like ability who are paid chiefly in dollars, are of necessity getting more of them."

Hope for the future lies in the selective process which takes the few individuals best qualified and places them on a par with their intel-

lectual peers in regard to income in other professions. At the present time resources in the higher schools are not used economically. The numbers of the teachers can only be reduced by concerted action which must come through centralization. "The State that has forty colleges could get on better with ten;" the colleges could then afford to pay higher salaries and get better teachers.

Report of the Committee on Normal Schools, Z. X. SNYDER, Chairman. Proceedings of the National Educational Association, 1899.

This report falls into six sections, viz., the function of the normal school, training schools, geographical and historical variations that exist in normal schools in the United States, the inner life of a normal school, normal school administration and State normal schools.

Under the first heading the normal school curriculum is discussed. Two courses are suggested, one for fully prepared students who should be high school graduates, and a substitute course for students from the grammar schools. The professional course should be not less than two years in length, it should not be constant, but variable and tentative; the committee suggests twenty-eight different centers for instruction. These centers include the mathematical, physical, biological and social sciences in addition to strictly professional work, besides music and art. The committee enumerates as professional subjects, the philosophy of education, the science and art of teaching, the history of education and school economics, but makes no effort to determine their relative values or functions. Such vagueness cannot but be disappointing and inadequate. The attempt to develop twenty-eight different lines of training in two years must inevitably result in superficiality and shallowness. The minimum course includes a review of the elementary branches and the secondary studies in addition to the foregoing. The sanctioning of any such minimum course seems to the writer to be a mistake; if there must be secondary school work done in connection with normal schools, why not place it in a distinct division of the school instead of intermingling the two? No more effectual means for securing an all-round mechanical smattering could possibly be devised than the measures recommended in this section of the report.

Division two of the report treats of training schools and presents a marked contrast to section one. Instead of loose generalities we have twenty-nine specific theses or recommendations treating of the practical side of normal work in all its phases, and great thoroughness without degenerating into mechanism or pettiness. Section three is the best extant account of the types of normal schools existing in the United States, with a brief sketch of their genesis. The chapter on the inner life of the normal school lays due emphasis on social activities, and is to be commended to the "driving" type of the principal. The sections given to administration contain valuable summaries and descriptive materials.

While the last five sections of the report are distinct contributions to normal school administration, the report, on the whole, must be pronounced a failure, because it dodges the discussion of the most fundamental phases of the normal school problem. It does not emphasize the dependence of the normal schools on the secondary school system, nothing is said of the theoretical side of professionel training, the qualifications and preparation of the normal school instructing force is entirely omitted. Outside public opinion needs clear, distinct utterances in behalf of a higher standard of professional training; the committee has offered it a report which either equivocates or is silent on the main necessities of the situation, but which contains much excellent advice on minor points.

Preliminary Report of Committee on the Formulation of a Course of Study. (Reports from the various sections, by A. G. BOYDEN, Bridgewater; Miss MARION BROWN, New Orleans; HOMER H. SEERLEY, Cedar Falls, R. I; BOONE YPSILANTE and EDWARD T. PIERCE, Los Angeles.) Proceedings of the National Educational Association, 1898.

Each of the above persons endeavored by the circulation of a questionnaire to obtain the best expert opinion of the locality in reference to the requisites for a normal school curriculum. These reports, therefore, contain the best summary of criticism of the normal schools which has yet been published. President Seerley gives a summary of the prevailing view among three classes of educators, viz.: (1) college and university men, (2) city superintendents, and (3) normal school officials. College presidents and professors thought that the normal school curriculum might be improved by connecting it more closely with the work of the secondary schools and State universities, by eliminating a large part of the academic instruction and by making the training more intensive and thorough. The city superintendents object to the normal schools because they admit their pupils without proper preparation and graduate them with a knowledge of methodology and devices rather than of the doctrines and principles of education. "There is a tendency, they think, to make teaching a trade rather than a profession, and they place most of the cause for this growing evil at the door of the normal school, which tries to instruct its students in the mechanism of management and teaching before they are prepared in scholarship, age or experience in life to view educational ideas and methods from the true and proper standpoint." The normal school principals considered a large amount academic instruction necessary under present conditions, objected to uniformity and laid great emphasis on the "practice work."

H. D. SHELDON.

The following are brief notices of a few of the more important articles that have appeared in the Japanese Child Study Magazine, since its origin a year ago.

(1) "Contents of Japanese Child-minds." In this study Mr. Takashima applied a method in which he asked children to make drawings of any sort which they might think of. Thus, a great many thousands of drawings were gathered from 352 children of first four grades in a primary school. He classified them and found the following results. There were 194 different objects of drawings among 2,931. [1]Among 194 there were 105 which belong to artificial objects, while 89 to natural objects, such as man, animals, plants and scenery. When he classified them according to the different grades he found as follows:—1st Grade (78 children), 64 objects: artificial, 33; natural, 31. 2nd Grade (90 children), 127 objects: artificial, 70; natural, 57.

(2) "Development of Child Study in Japan." See *Ped. Sem.*, Vol. VI, p. March, 1899.

(3) "Plays and Toys." Mr. Matsumoto making some historical review on plays and toys in Japan, quotes Bakin, the famous Japanese Shakespeare, who wrote a very interesting chapter on plays and toys a century ago. He says that to propound a riddle before children is to cultivate their sagacity; to teach them to play 'cat's-cradle,' a puzzle done with a string looped over the fingers, is to train their skill in weaving; and, to teach how to play cards or 'kaiawase,' a kind of game played with shells which are beautifully painted, is to train quick movement of eyes and muscles.

Thus, in Japan, there are many hundred different plays and games and they are carefully taught by parents and teachers. Mr. Matsu-

[1] See table on opposite page.

Contents of Children's Minds.

TABLE.

	NO. OF DRAWINGS.			NO. OF OBJECTS DRAWN.		
	By Boys.	By Girls.	Total.	By Boys.	By Girls.	*Total.
1. Furnitures	147	336	483	24	33	45
2. Plants and Vegetables	137	212	349	19	20	25
3. Scenery	233	163	396	17	12	22
4. Soldiers	49	0	49	16	0	16
5. Man and parts of body	64	113	177	13	7	15
6. Buildings	48	148	196	8	6	13
7. Armors	311	7	318	12	2	12
8. Animals	80	89	169	8	8	11
9. Transportables	75	42	117	6	6	8
10. Stationaries	60	117	177	5	8	8
11. Games	90	6	96	5	1	5
12. Toys	32	49	81	3	3	5
13. Toilets	0	80	80	3	0	3
14. Musicals	0	27	27	0	3	3
15. Food	0	4	4	0	2	2
16. Money	2	0	2	1	0	1
Total			2931			194

*This total excludes all duplicate.

moto classifies them into five groups and calls them: (1) Sensational games, (2) Athletic games, (3) Imitative games, (4) Æsthetical games, and (5) Intellectual games.

During the first period of a child, which he calls "sensational-games-period," all toys are made to appeal to sight, hearing and touch. In Japan, "face games" and many other "hand games" are very popular in this period. They need no help from toys but face and hands. In a later period, out-door games, such as kite-flying, tilting, top spinning, and such are very common among boys.

Scientific toys, such as steam-engine, steamboat, train and others are widely used by Japanese children and the fact helps our school teachers on natural sciences a great deal.

The writer thinks that the ideal way in primary schools would be to so modify their methods that children may take study as a part of play and not as study.

(4) "Stories." Some Japanese stories are known to be six hundred years old. The main source of Japanese stories is Buddhism, while Japanese history, biography, Chinese antiquity and such like gave birth to many interesting stories. In a book which was published a century ago it is said that by the use of stories they intend to illustrate the ideas of the seasons, climate, and weather, the reason of rise and fall of an individual, State and race, and the proper application of moral truth.

In his discussion Mr. Matsumoto goes on to state that the story is: (1) to cultivate sympathy of children; (2) to teach morality more concretely; (3) to exert a stronger influence over the conduct of the child by use of the character; (4) to teach a child that there is a world besides himself. However, he cautions that we must teach a child not to imitate any characters in a story with a great care.

The story may be based (1) on fact and (2) on imagination. A child likes to hear a simple imaginary story at first and then his tastes will

grow toward a story based on facts. At a later period, his tastes will grow gradually toward more complex imaginary story which is not far from facts and daily experience.

The story must be told in a good language. Extreme exaggeration must be avoided. Immoral and cruel things must not be told in minute detail. Gestures and pictures are not used extensively in Japan and the story teller is earnestly desired to use them.

(5) "Children's Ideals of Profession." Mr. Fujü inquired of 117 boys of the first two years at a high school as to their ideals of a profession and got the following result:—

Army and navy,	62
Engineers,	15
Merchants,	8
Statesmen,	6
Horticulturists,	5
Writers,	4
Biologists,	3
Scientists,	2
Physicians,	2
Unsettled,	10
	117

Mr. Akata inquired of 48 boys and 47 girls at a primary school, and secured the following result:—

BOYS.		GIRLS.	
Soldiers,	21	Tailors,	12
Merchants,	11	Merchants,	12
Physicians,	3	Teachers,	10
Carpenters,	3	Musicians,	1
Bankers,	1	etc.	
Scholars,	1		
etc.			

From those two detailed studies we may be able to sum up the result as follows:—

(1) Children's ideals are not definite.

(2) The following have a strong influence:

(a) A local hero.
(b) Father's profession, with his success or failure.
(c) Residence.
(d) Father's social standing and wealth.
(e) His daily needs and wants.

(3) While a good number of girls expressed a desire to become school teachers there were none among boys.

(4) Children are inclined toward the more substantial profession than the abstract one.

(5) Home influences and moral training at school have a great force to put these ideals into practice.

(6) Family tradition and religious miracles are made after a strong force to perfect their ideals.

(6) "Children's Conception of Death." Mr. Takashima finds that children think that death is the end of everything. There is a very small proportion of children who think that the soul will survive. His study reveals a great danger of the Japanese as a race at the present age. School teachers are most indifferent in religion, otherwise rank agnostics. They are teaching children that there is no God, no spirit, and no future.

Thus, the author emphasizes that religious instruction must be put aside entirely from schoolrooms. Teachers must not teach any theology. Better let children come to their own conclusions on those subjects.

(7) "The Passions of Children and the Weakness of the Japanese as a Race." Mr. Takashima points out eight weaknesses of the Japanese as a race, in a hurried manner. On the whole, he thinks that Japanese are far more emotional than many other races. The stronger emotional characteristics of people are traced back to their childhood. (1) They lack steadfastness of purpose, ambition and enterprise; (2) They grow old faster; (3) They are more easily satisfied; (4) They are more irregular; (5) They are headless—lack of sound meditation and calculation; (6) More narrow-minded; (7) Lack of economy; (8) Lack of public spirit.

(8) "Fear and Conduct of Children." To study 'fear' Mr. Akata asked, among many others, such a question as "what do you fear most?" and 87 children of primary school made the following answers:

1.	Robbery,	45
2.	Insane people,	16
3.	Murderers,	6
4.	Ghosts and spirits,	5
	etc.	

Fear among children is due more to story than to experience with the objects of their fear. Stories of ghosts and such like are dying out in Japan, and there were only one boy and four girls who feared ghosts.

The writer asked again, "whom do you fear most?" A majority answered father and then the policeman. Thus:—

Fathers,	25
Policemen,	24
Nobody,	22
Teachers,	4
Mothers,	4
etc.	

In his extended discussion the writer maintains that training of children must not be entrusted entirely to women.

When he asked what is a good thing to do, and what is a bad thing to do? the children answered as follows:—

	GOOD THINGS.			BAD THINGS.	
1.	Honest things,	39	1.	Dishonesty,	20
2.	Filial piety,	16	2.	To rob,	18
3.	Kindness to others,	5	3.	To lie,	16
4.	Thrifty,	4	4.	To quarrel,	11
	etc.			etc.	

The conduct of a child is largely determined by a selfish pleasure-seeking. Distinction between good and pleasure is not clear among young children. Honesty and dishonesty lead the good and the bad respectively. Girls show more obedience to parents and elders than boys. Boys are decidedly inclined to fight while girls are to keep peace.

(9) "Literary Tastes in School Text Books." The school text book is a burning question in Japan. Mr. Isogarashi discusses to a great length the importance of literary taste in school text books and says that the æsthetic element is of the greatest importance, (1) because, while reading books the pupil will be helped through their inviting æsthetic element, to build up his moral character; (2) because it will cultivate his subtler emotions, and (3) because it ought to become a model for composition.

Then, he makes a careful comparative study between Japanese and American readers. He thinks that the American text books are far more complete from any point of view. Japanese educators and teachers lack the inspiration of close connection with their composers and writers.

(10) "Music and Morality." When she made some study on their "likes and dislikes" Watanabe found that penmanship leads in the list of dislikes and after that music. Thus, she was led to make some further investigations on music. She thinks, from her careful study, that the main reason why children are not interested in music is because of the lack of proper songs, proper method and qualified teachers, and not because of the lack of interest among children. She reminds us that the most important step, and yet one so often overlooked by teachers, is to begin with a simple song with a simple tune which children can easily sing and understand. A song which they like best is one which is so simple, easy and yet very active. Their minds are active, and children are much fascinated in those active songs everywhere.

After discussing at length the relation of music to morality after the usual fashion, she sharply points out the importance of music for the uplifting of the morality of a nation.

F. M. YAMAGUCHI.

BOOK NOTES.

G. S. H.

Education in the United States, edited by NICHOLAS MURRAY BUTLER. A series of monographs prepared for the United States exhibit at the Paris Exposition, 1900. J. B. Lyon Co., Albany, 1900. 2 Vols. pp. 977. Price, $3.50.

These volumes present the present status of American education under twenty topics by as many representative writers. The topics are as follows: Introduction, by the editor; organization and administration, A. S. Draper; kindergarten, Susan E. Blow; elementary, W. T. Harris; secondary, E. E. Brown; college, A. F. West; university, E. D. Perry; women, M. Carey Thomas; training of teachers, B. A. Hinsdale; school architecture and hygiene, G. B. Morrison; professional, J. R. Parsons; scientific, technical and engineering, T. C. Mendenhall; agricultural, C. W. Dabney; commercial, E. J. James; art and industrial, I. E. Clarke; defectives, E. E. Allen; summer schools and university extension, H. B. Adams; scientific societies and associations, J. McK. Cattell; negro, Booker T. Washington; Indian, W. M. Hailmann.

The type is clear and of generous size, the page large and open, the paper and binding cheap but not mean. The work as a whole is, as the distinguished names of the authors sufficiently indicate, an admirable conspectus of the late development and present status of education in this country.

Educational Aims and Methods, by SIR JOSHUA FITCH. The Macmillan Co., New York, 1900. pp. 448. Price, $1.25.

The lectures and addresses given at various times within the last few years are here published. The present volume is more miscellaneous and less systematic than the author's former "Lectures on Teaching." It treats of Bible teaching, Socrates and his method, the education of character, reason, hand and head work, endowments, Ascham, teachers' institutes and conventions in America, Thring, university extension, Lancaster, Pestalozzi, the future of the Sunday School, women in universities and the French leaving certificates.

The Messages of the Earlier Prophets, by FRANK H. SANDERS and CHARLES F. KENT. Charles Scribner's Sons, New York, 1899. pp. 304.

The series contemplated of twelve volumes, of which this is the first, is pedagogically interesting because the definite results of sober scholarship are represented by experts meant to enable every reader of the Bible to appreciate and obtain a mastery of the essential facts and teachings of it in non-biblical language. This gives the work a unique interest.

A Practical Handbook on Sunday School Work, by L. E. PETERS. American Baptist Publication Society, Philadelphia, 1900. pp. 128.

This is a very favorable specimen of the growing body of Sunday

School literature by a Baptist Institute worker. The first part is devoted to methods, and the last to a characterization of childhood. Unfortunately the author has not availed himself of the epoch making new literature upon this latter subject, and is a little platitudinous.

The Life of Dwight L. Moody, by WILLIAM R. MOODY. Fleming H. Revell Co., New York, 1900. pp. 590.

The son of the great evangelist here presents the story of his life from boyhood to the end. The work is illustrated with nearly one hundred cuts.

Domestic Science in Grammar Grades, by MRS. L. L.W. WILSON. The Macmillan Co., New York, 1900. pp. 193. Price, 60 cts.

The home of savages, half-civilized, and civilized people, form the first subject; then follow the evolution of fire, matches, the Roman and modern kitchen. Foods are treated under the heads of proteids, carbo-hydrates, bread, salads, drinks and condiments. The dining-room follows, then the bed-room and its contents are traced from Bible and classical times down. The laundry, household pests and house cleaning, and finally sewing conclude a really new book.

School Sanitation and Decoration, by SEVERANCE BURRAGE and HENRY T. BAILEY. D. C. Heath and Co., Boston, 1899. pp. 191. Price, $1.50.

This is a valuable and practical contribution to its subject; treating location of schools; construction and requirements of school buildings; ventilating, heating, lighting; sanitation; the old country school-room; children; influence of school life upon the eye; school authorities and patrons; beauty in school work. It is copiously illustrated with 9 photogravures, 52 plates and 28 figures in the text.

Nicholas Comenius, or Ye Pennsylvania Schoolmaster of Ye Olden Time, by WILLIAM RIDDLE. C. W. Bardeen, Syracuse, 1898. pp. 469.

This story has its sphere in the schoolroom, the struggles of old and new methods in the country, its pathos is the discharge of the old masters, the triumph of a young superintendent heavily handicapped by prejudices and ignorance, the conversion to better ways of a very influential old millwright preacher, the honorable and enthusiastic reception of Comenius in his old age at the teachers' institute, and finally the wedding of the young master and the daughter of his chief supporter.

Commissioner Hume: A Story of New York Schools, by C. W. BARDEEN. C. W. Bardeen, Syracuse, 1899. pp. 210.

This tale was published twenty years ago in the *School Bulletin* as a sequel to Roderick Hume, and gives an interesting picture of certain phases of school life in New York State.

Three Score and Ten in Retrospect, by J. W. HOOPER. C. W. Bardeen, Syracuse, 1900. pp. 80. Price, $1.00.

A country schoolmaster, who began his work in 1847, here tells his reminiscences in a way that illustrates most interestingly the conditions of school work in New York State during the period he describes.

The Education of the Young in the Republic of Plato, by BERNARD BOSANQUET. University Press, Cambridge, 1900. pp. 198.

This is a convenient introduction to the study of the Republic, of which it contains a new translation of most of the second and all of the third and fourth books. An introduction contains an account of Greek education in its best days, education after Plato, etc.

The Care of the Child in Health, by NATHAN OPPENHEIM. The Macmillan Co., New York, 1900. pp. 308.

This is an eminently practical book treating of the regimen of pregnancy, the baby's outfit and nursery, feeding, bathing, sleep, exercise, clothing, habits, relation to parents, education, defectives, diseases.

Discovery of a Lost Trail, by CHARLES B. NEWCOMB. Lee and Shepard, Boston, 1900. pp. 282. Price, $1.50.

This is a simple study of life with plain suggestions of confidence, patience and gladness. It essays no novelties or metaphysical fugues, and treats confidence, patience, will, decision, power, expression, gladness, etc., in a wholesome, hortatory way.

An Outline of the Text of Taylor's "Study of the Child," by HILL M. BELL. Des Moines, Ia., 1900.

This outline course on Taylor's "Study of the Child" is a rather good list of the main topics in this new and growing field conveniently arranged.

Introduction to Zoölogy, by CHARLES B. DAVENPORT and GERTRUDE C. DAVENPORT. The Macmillan Co., New York, 1900. pp. 412. Price, $1.10.

This book has over three hundred well-chosen illustrations, and can best be characterized by the topics of the leading chapters in order as follows: the grasshopper and its allies, the butterfly, beetle, fly, lithobius, spider, crayfish, daphnia, earthworm, nereis, slug, clam, starfish, hydra, paramecium, smelt, newt, lizard, sparrow, mouse, the development of the frog's egg. The appendix contains an outline of laboratory work in each of these topics, titles on the ecological and systematic zoölogy of American animals, a synopsis of the animal kingdom, with a glossary and index.

An Outline of Political Growth in the Nineteenth Century, by EDMUND H. SEARS. The Macmillan Co., New York, 1900. pp. 616.

The histories and problems of the Latin nations, southeastern Europe and Russia, the Teutons, Great Britain and her colonies, the United States, Spanish and Portugese America, and unclassified countries are here outlined in an interesting and comprehensive way, with a bibliography of sources at the end of twenty pages.

A Short History of the United States for School Use, by EDWARD CHANNING. The Macmillan Co., New York, 1900. pp. 401.

This work is copiously illustrated, contains a number of interesting historical maps, passes lightly over the early periods of our history, and comes down to McKinley's administration. For colonial life other authorities must be consulted.

Outlines of Economics, by RICHARD T. ELY. The Macmillan Co., New York, 1900. pp. 432. Price, $1.25.

This was undertaken as a revision of the author's political economy, but has become practically a new book. Though it does not supersede the older one it is more theoretical, and aims to take the student further. To this end much space and attention is given the bibliography, and there is a valuable list of topics suggested for essays, discussions and debates.

A Modern Reader and Speller, edited by GEORGE RIDDLE. Herbert S. Stone and Co., New York, 1900. pp. 629.

This well known elocutionist, formerly connected with Harvard College, prints his kit of selections for public reading, perhaps one hun-

dred or more in number, narrative, oratorical, dramatic, humorous and poetic. They are in very large part new, very modern, out of the ordinary, and therefore interesting.

Outlines of a System of Classical Pedagogy, by THOMAS FITZ-HUGH. Mayer and Müller, Berlin, 1900. pp. 24.

The author outlines in detail his course and theory of work during his ten years in the University of Texas in an interesting way.

Cornelius Nepos Twenty Lives, by JOHN E. BARSS. The Macmillan Co., New York, 1900. pp. 316. Price, 90 cents.

This mainstay of second year Latin is equipped with notes and vocabulary, with exercises for writing Latin in the end. The text and the material get-up of the book are in every way commendable.

Der Scheik von Alessandria und seine Sklaven, von WILHELM HAUFF. Edited with notes and vocabulary by Walter Rippmann. The Pitt Press Series. The Macmillan Co., New York, 1900. pp. 183. Price, 50 cents.

This story has obtained an enviable reputation in Germany, but we consider it unfortunate that the story of Abner the Jew has been omitted.

The Temple Primers. The Macmillan Co., New York, 1900. Price, 40 cents each.

The History of Language, by HENRY SWEET. pp. 154.
Some Problems of the Day in Natural Science: An Introduction, by ALEX. HILL. pp. 140.
A History of Politics, by EDWARD JENKS. pp. 174.

These three volumes seem, upon cursory inspection, to fully sustain the promise of the earlier works in the series, which were briefly characterized in the preceding number of the *Seminary*.

Second Book North America with an Especially Full Treatment of the United States and its Dependencies, by RALPH S. TARR and FRANK M. MCMURRAY. The Macmillan Co., New York, 1900. pp. 469. Price, 75 cents.

This second book fully realizes the anticipations excited by the first, noted in our last. The 360 cuts are well chosen, interesting and suggestive. Maps are reduced to their proper prominence. Modern fads are recognized if they have anything in them. The appendix contains a few pages of valuable references, tables of areas, populations, etc., and an index which is also a pronouncing vocabulary. As a whole the work is tasteful and pleasing.

A Friend of Cæsar: A Tale of the Fall of the Roman Republic, Time 50-47 B. C., by WILLIAM STEARNS DAVIS. The Macmillan Co., New York, 1900. pp. 501. Price, $1.50.

This is a voluminous and rather ambitious work by a recent graduate. It shows unmistakable signs of ability, but also reveals unmistakably the fact that great progress and labor of soul must be yet undergone before any high degree of success is possible.

Horace Mann in Ohio: A Study of the Application of his Public School Ideals to College Administration, by GEORGE ALLEN HUBBELL. Columbia University Contributions to Philosophy, Psychology and Education, Vol. VII, No. 4. The Macmillan Co., 1900. pp. 70. Price, 50 cents.

The world knows Horace Mann and his educational labors and teachings in Massachusetts. His transference to a new and remote

practical field in Ohio in the latter part of his life, which was so very critical for a man of his ideals and nervous temperament, has never been adequately written up, and Mr. Hubbell, who was a pupil there, has here performed a real service. Interesting, too, are the letters he prints stating their impressions of Horace Mann from other former pupils there. For many years after his death, this institution maintained a desperate struggle with many adversities and even calamities to maintain a high standard in this State of many colleges. The attempt of the Unitarians to graft their eastern culture upon the wilder western Christian denomination was a bold and at one time promised to be a successful venture, but the conditions of such ethnic pedagogy was not then well understood.

Work and Play, by JOHN E. BRADLEY. The Pilgrim Press, Boston, 1900. pp. 208.

Bradley, who gracefully dedicated this tasteful book to his wife, here discusses in successive chapters — student life, intellectual growth, work, play, health, habit, the cost of foundations, unconscious education, reserved power, the scholar in public life, castles in Spain, what is education? They were first given to his students and most of them first reported or published in the College Rambler, and are now enlarged for a larger public. The teachings set forth are wholesome, stimulating and sane to the core, and show that this pupil of Mark Hopkins, like his teacher, knows how to keep in close and healthful rapport with his pupils.

Side Lights on American History, by HENRY W. ELSON. Series II. The Civil War and our Own Times. The Macmillan Co., New York, 1900. pp. 410. Price, 75 cents.

This volume begins where its predecessor left off. About half of it is devoted to the Civil War and the rest to subsequent events ending with the close of the Spanish War.

Elementary Chemistry for High Schools and Academies, by ALBERT L. AREY. The Macmillan Co., New York, 1899. pp. 271. Price, 90 cents.

This book is the result of six years' laboratory experimentation on the theory that the best work in chemistry is derived from the process of thought which the student follows when questioned during his experiment. Each student in a large class cannot be thoroughly questioned, and therefore a special set of questions is here added to guide the student's inferences and suggest lines of thought.

The Hexateuch According to the Revised Version, edited by J. ESTLIN CARPENTER and G. HARFORD-BATTERSBY. Vol. I. Introduction and Tabular Appendices. pp. 279. Vol. II. Text and Notes. pp. 359. Longmans, Green & Co., New York, 1900.

These volumes are intended to place before English readers the principal results of modern inquiry into the composition of the first six books of the Old Testament. It represents a vast amount of work continued for many years by many men, as well as a great deal of labor by the Committee of the Oxford Society of Historical Theology, who began it in 1891. It has several great advantages over the Haupt Polychrome Bible within the narrower limits to which the present work confines itself. First the notes of the second and the entire introductory volume are devoted to brief and scholarly statements of the grounds on which modern criticism rests. The first volume is almost a model of condensed presentation. This the Polychrome Bible lacks. Again the Carpenter-Battersby work has an easily com-

prehensible scheme of showing by letterings at the head of the page the original authorities of each passage, and by moving the paragraphs or phrases to the right or left the degree of probability of one or another source can be indicated, which the uniform coloring in the Polychrome edition, which compels every part to be categorically assigned to some source without regard to the degree of probability, lacks. And lastly the style and make-up of this book pleases as much as the Polychrome offends good taste.

NOTES.

H. L. Nelson, in a significant address at the Williams alumni dinner, appeals for specialization in the humanities as the proper policy for that institution. He quotes and agrees with G. Stanley Hall that through specialization the way of return is open for the small college to its old time usefulness and distinction. He quotes Jebb's late argument that humanism is the best training not only for a literary but for most public careers; also Brice, who pleads that the change from literary to scientific teaching "has gone very much too far," urges that the present reaction against science at Oxford and Cambridge was because it degenerated into a cram of facts or engrossment in money making occupations at a time when the imaginative and moral side ought to be stimulated. Balfour has taken still higher ground, pleading that all education not in large part literary is maimed and one sided. Not to be at home in the great imaginative literature, not to be in sympathy with great literary artists and thinkers of the past, is to leave the higher, finer sympathies untrained and tends to produce "a hard, dry, unfertile type of mind." "If Williams College wishes to become a center of intellectual light and leading in the twentieth century, it must breed humanists."

The educational work of Edwin D. Mead, Editor of the New England Magazine, is worthy of the attention of all educators. In his Editor's Table and as Founder and President of the Twentieth Century Club, and Director from the first of the Old South work founded by Mrs. Hemenway in 1881, and as writer of editorials for the leading Boston dailies and of occasional pamphlets, he has not only made himself in the language of Edward Everett Hale, whose friends would make him the exception, the leading literary man of Boston.

His own work on Kant, his volume on Luther, his pamphlets on Thomas Wentworth Higginson, Horace Bushnell, the Two New Englands, the Old and New Books of South America, the Old South Pilgrimage to Newburyport, etc., illustrate what an earnest, sane, absolutely frank and able man worthily seconded by the many public and private activities of his wife can do. Besides all this work he has a sane and helpful word on most of the great public questions of the day.

Charles Dudley Warner's Presidential Address before the American Social Science Association in May, on the education of the negro, states that millions have been invested in his higher education supposing this would compel the lower. He pleads for a reversion of this policy. We must confess a mistake. The negro must be no longer the pawn of politics; lower and especially industrial education is the end and no more top dressing of culture on fields without depth of soil. Negro crime is increasing faster than that among whites, and faster among northern than among southern negroes. This race has gifts of music, temperamental gaiety and emotional religion, but lacks responsibility and thrift. We cannot apply the same treatment as to higher races. No negro tribe ever invented a language and Africa shows no progress. Contact with higher races has produced no permanent effect. Drop philosophy, modern and ancient languages, higher science and mathematics then, and attend to rudiments.

The *Seminary* has lately received a bundle of catechetical pamphlets, which show a strange revival of interest in a mode of educational work which the Catholic Church has always maintained the importance of, but which modern pedagogy has long since discarded. In a late number of the Congregationalist Dr. F. E. Clark advocates this method, and names sixteen of these recent pamphlets with a few words of commendation. While most of these catechisms differ from that of the Westminster Assembly in being couched in scripture language, they hold to the stereotyped question and answer method which is mediæval and outgrown. As an expression of reaction against the uniform International Series, the catechetical movement is a wholesome sign, but, unfortunately, its advocates invite the Sunday School work backwards and not forwards. Another error is in laying undue stress upon the Bible phraseology. Much of this, especially the Psalms and the sayings of Jesus, is unimprovable, but scripture phraseology often disguises truth not only in the authorized but in the new version. Sanders and Kent, in their paraphrasing of the prophets, have performed a great pedagogical service, clearing up much that is obscure and archaic, and presenting the soul of truth in a clearer way than it stands in the oriental phraseology of the prophets. The need of radical reform in Sunday School work is imperative. Its importance is coming to be more and more recognized, so that on the whole, discouraging as is the catechetical reaction, there is hope at the bottom of the casket.

In the *Forum* for June, 1900, Dr. G. Stanley Hall prints an article entitled "College Philosophy," in which he vigorously criticises the ultra epistemological methods of some of his philosophical contemporaries by name. He urges that to deprive adolescent souls of a full-hearted belief in the external world by the method of Berkeley, then to undermine the belief in the reality of the self or *ego*, and to plunge them in the solipsistic hoppo or volute is dangerous. It always makes life and nature seem more or less unreal. It introverts at a time when the mind should be most objective. Pedagogically the soul does not need to encyst itself thus to metamorphose into a higher type of psychic life. He discusses the methods of saving students thus shipwrecked, of which there are many—religious, moral, psychological, common sense. The method he regards as the modern analogue of sophism among the Greeks and scholasticism in the Middle Ages. In the days of Abelard and after, the question was whether words could express reality; now, it is whether sense or thought can know it. Again nature does not pick off deciduous leaves to make room for buds. The Scotch school, and many men like Fechner, Fouillée, Sergi and Schumann, renounce the theory of knowledge; for most students it is better to keep out of agnosticism than to get out.

CLARK UNIVERSITY, 1889-1899. DECENNIAL CELEBRATION.

Clark University, having only graduate and therefore few students, and practically giving only the degree of Doctor of Philosophy, has had no commencements, but marked the close of its first decennium by exercises of an unique type.

It invited Santiago Ramón y Cajal, the leading neurologist of the world and Rector of the University of Madrid, to leave his work at home and come to this country and lecture for a week to the leading neurologists of America. His visit, coming as it did, just at the close of the Cuban War, attracted great attention, and his frank and manly utterances in various newspaper interviews were said by several men of great eminence to be the sanest words upon the subject. He came with his wife and was the guest of one of Worcester's leading citizens, Honorable Stephen Salisbury, but despite the many social attractions he devoted himself with extraordinary assiduity day and night to the preparation of his lectures, largely on his own researches, on "The Comparative

Study of the Sensory Areas of the Human Cortex," "Layer of the Large Stellate Cells," and "The Sensori-Motor Cortex." These lectures given daily in French were illustrated by many large charts, especially prepared by his own hand and afterwards given to Clark University, and are now printed with thirty original plates illustrating them.

Émile Picard, Professor of Mathematics at the University of Paris, selected by the mathematical department as perhaps the leading European authority in his field, also attracted great attention. In person, language and artistic perfection of presentation, his lectures left nothing to be desired, and the opinion of several of the experts present was that he gave them new and high ideals of the most effective methods of presenting the highest mathematical themes. His topics were the development of the idea of function, the theory of differential equations, and of analytic and other functions.

Ludwig Boltzmann, the distinguished head of the department of Theoretical Physics at the University of Vienna, and the continuer of the lamented Hertz, gave four lectures on the fundamental principles of mechanics. His lectures were illustrated by models made by himself and brought from Vienna. Madame Boltzmann accompanied him in his visit to this country.

Angelo Mosso, now Rector of the University of Turin, and eminent for his physiological researches in sleep and fatigue, and head of the new laboratory 13,000 feet high in the Alps, for the study of physiological conditions in great altitudes, lectured on "Psychic Processes and Muscular Exercise" and "The Mechanism of the Emotions."

August Forel, of Zürich, lectured on his own researches on the two subjects, which have made him famous,—hypnotism and the biology of ants.

Professor Picard was entertained by Professor Story, Professor Boltzmann by Professor Webster, Professor Mosso by Dr. Hall, and Professor Forel by Dr. Meyer. The social functions were an evening visit to the Worcester boat-house at the lake, the reception to about six hundred friends and Worcester residents at the University, and the reception to those attending the lectures by Dr. Hall.

A public exercise at which scores of congratulatory letters from foreign and other scientific and public men were read; a decennial address by President Hall was given; and the honorary degree of LL. D. was given to each of the five foreign visitors all of whom responded in brief addresses.

All the scientific lectures by the visitors; histories of the work and plans of the departments by each professor; a general historical sketch of the University; the congratulatory messages; the report of the librarian and treasurer; with full page portraits of the foreign visitors; with the names and titles of publications of all members of the University during the decade, are now published in an elegant volume of 566 pages, edited by Professor William E. Story and Librarian Louis N. Wilson, copies of which can now be had for $5 by addressing the latter.

BOOKS RECEIVED.

BARSS, JOHN EDMUND. Cornelius Nepos twenty lives. (Macmillan's Latin series) The Macmillan Co., N. Y., 1900. pp. 316. Price, 90 cts.

BLAISDELL, ETTA A. and MARY F. Child Life in Many Lands. A Third Reader. The Macmillan Co., 1900. pp. 192. Price, 36 cts. Child Life in Literature. A Fourth Reader. The Macmillan Co., N. Y., 1900. pp. 240. Price, 36 cts.

BOSANQUET, BERNARD. The Education of the Young in the Republic of Plato. (The Cambridge Series for Schools and Training Colleges.) The Macmillan Co., N. Y., 1900. pp. 198.

BUCKINGHAM, EDGAR. An outline of the theory of thermodynamics. The Macmillan Co., N. Y., 1900. pp. 205. Price, $1.90.

BURRAGE, SEVERANCE and BAILEY, HENRY T. School Sanitation and Decoration. A practical study of health and beauty in their relations to the public schools. D. C. Heath & Co., Boston, 1900. pp. 191. Price, $1.50.

BUTLER, NICHOLAS M. (Editor.) Education in the United States. A series of monographs prepared for the United States exhibit at the Paris Exposition, 1900. J. B. Lyon Co., Albany, N. Y., 1900. 2 vols. pp. 1-464 e; 465-977. Price, $3.50.

CHANNING, EDWARD. A short history of the U. S. The Macmillan Co., N. Y., 1900. pp. 401.

COLEGROVE, F. W. Memory; an inductive study. With an introduction by G. Stanley Hall. Henry Holt & Co., N. Y., 1900. pp. 369. Price, $1.50.

CRAWSHAW, W. H. Literary Interpretation of Life. The Macmillan Co., N. Y., 1900. pp. 266. Price, $1.00.

DAVENPORT, C. B. and G. C. Introduction to Zoölogy. A guide to the study of animals for the use of secondary schools. The Macmillan Co., N. Y., 1900. pp. 412. Price, $1.10.

DAVIS, WILLIAM STEARNS. A Friend of Cæsar. A Tale of the Fall of the Roman Republic. The Macmillan Co., N. Y., 1900. pp. 501. Price, $1.50.

ELSON, HENRY W. Side Lights on American History. Series II. The Civil War and Our Own Times. The Macmillan Co., N. Y., 1900. pp. 410. Price, 75 cts.

ELY, RICHARD T. Outlines of Economics. The Macmillan Co., N. Y., 1900. pp. 432. Price, $1.25.

FITCH, SIR JOSHUA. Educational Aims and Methods. Lectures and addresses. The Macmillan Co., N. Y., 1900. pp. 448. Price, $1.25.

HILL, ALEX. H. Introduction to Science. (Temple Primers.) The Macmillan Co., N. Y., 1900. pp. 140. Price, 40 cts.

HOOPER, J. W. Three score and ten. In retrospect. I. Boyhood days. II. Reminiscences of school experiences from twenty to seventy-two. C. W. Bardeen, Syracuse, N. Y., 1900. pp. 80. Price, $1.00.

JENKS, EDWARD. A history of politics. (The Temple Primers.) The Macmillan Co., N. Y., 1900. pp. 174. Price, 40 cts.

LEE, GUY CARLETON. Historical Jurisprudence. An introduction to the systematic study of the development of law. The Macmillan Co., N. Y., 1900. pp 517. Price, $3.00.

OPPENHEIM, NATHAN. The Care of the Child in Health. The Macmillan Co., N. Y., 1900. pp. 308. Price, $1.50.

SEARS, EDMUND HAMILTON. An Outline of Political Growth in the Nineteenth Century. The Macmillan Co., N. Y., 1900. pp. 616.

SWEET, HENRY. The History of Language. (The Temple Primers.) The Macmillan Co., N. Y., 1900. pp. 154. Price, 40 cts.

TARR, RALPH S. and MCMURRAY, FRANK M. Tarr and McMurray Geographies. Second Book—North America. With an especially full treatment of the United States and its dependencies. The Macmillan Co., N. Y., 1900. pp. 469. Price, 75 cts.

WILSON, L. L. W. Domestic Science in Grammar Grades. A Reader. The Macmillan Co., N. Y., 1900. pp. 193. Price, 60 cts.